

[Document Type] Drawing

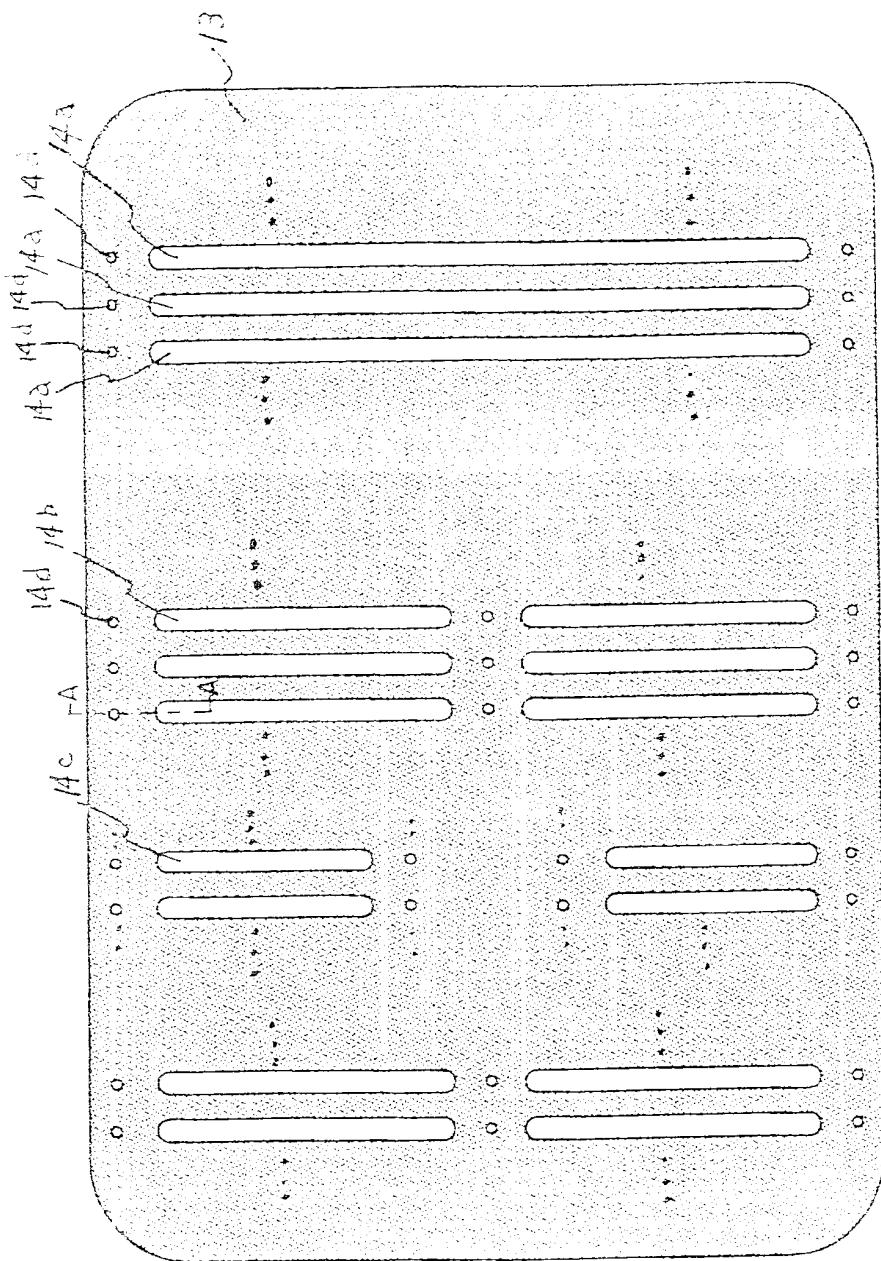


Fig. 1

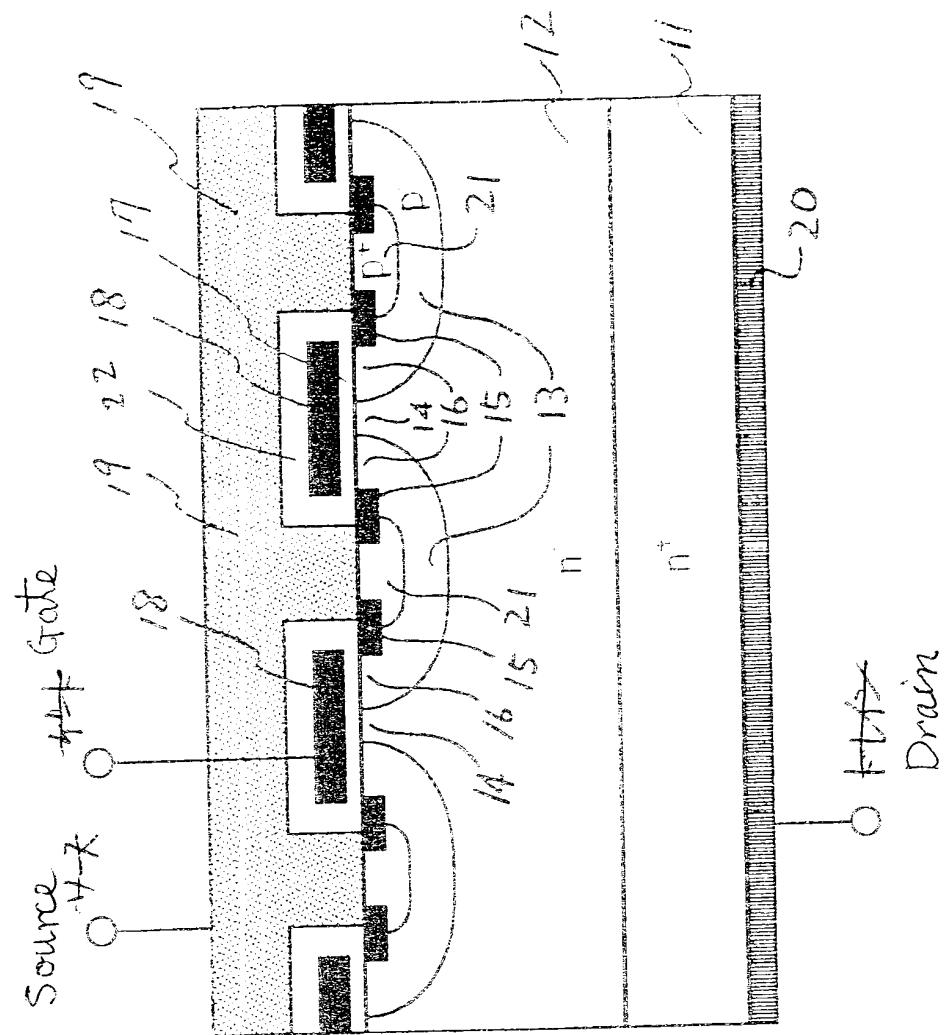


Fig. 2

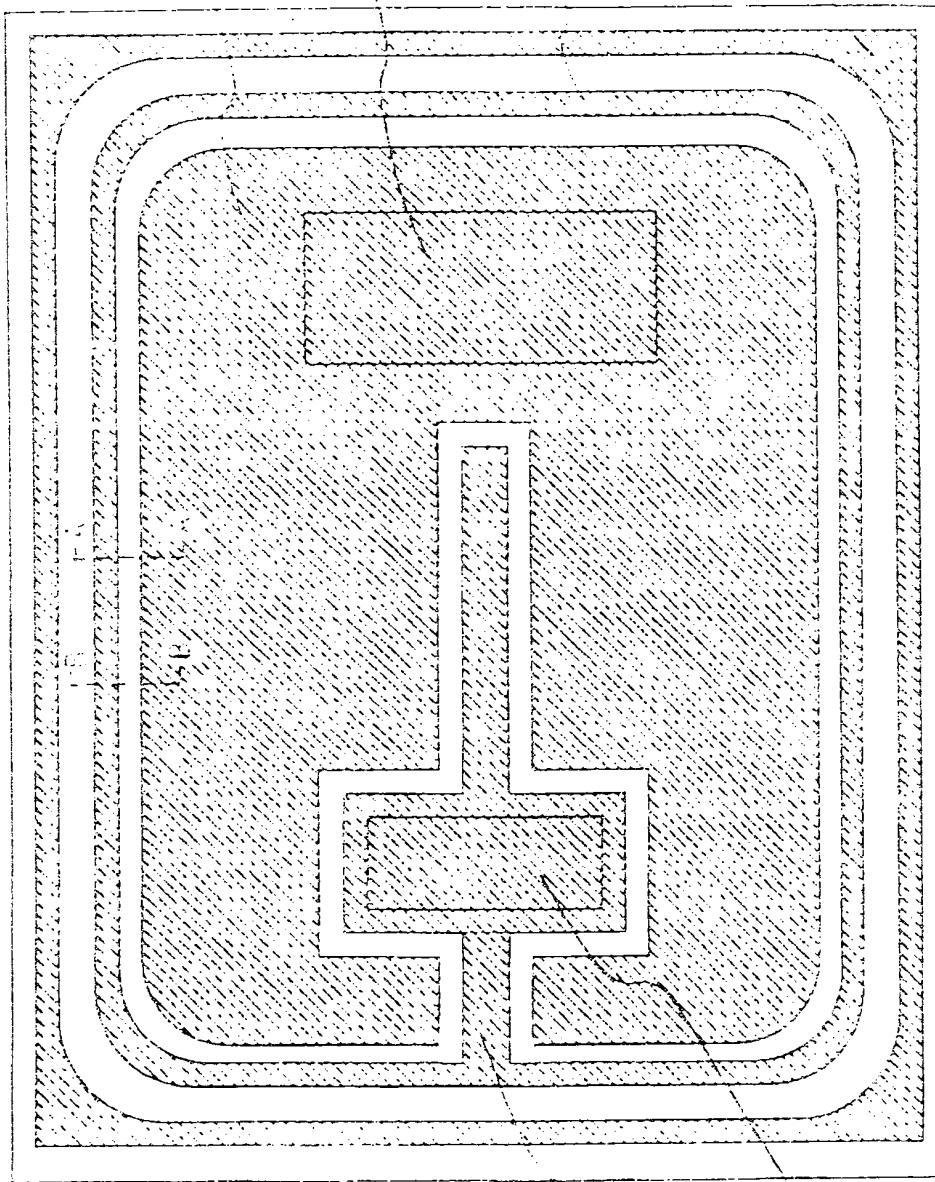


Fig. 3

29

21

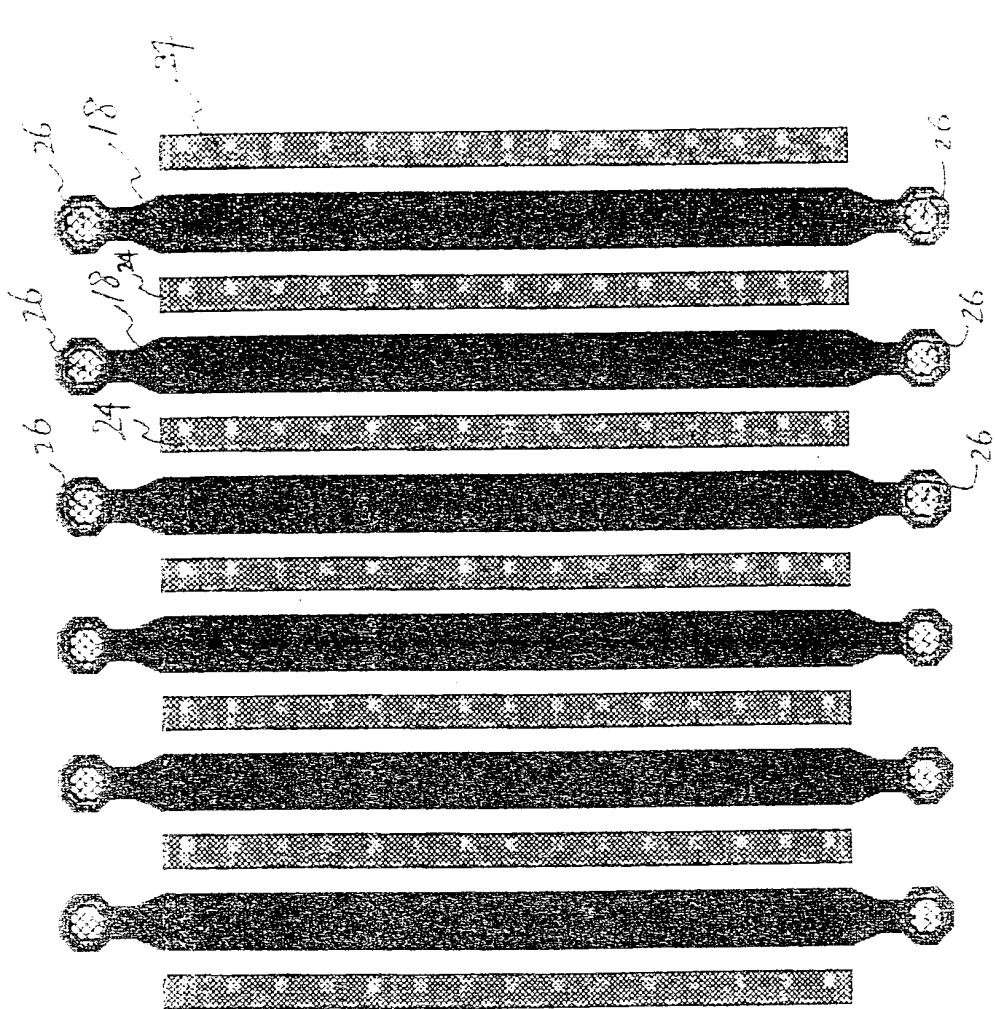


Fig. 4

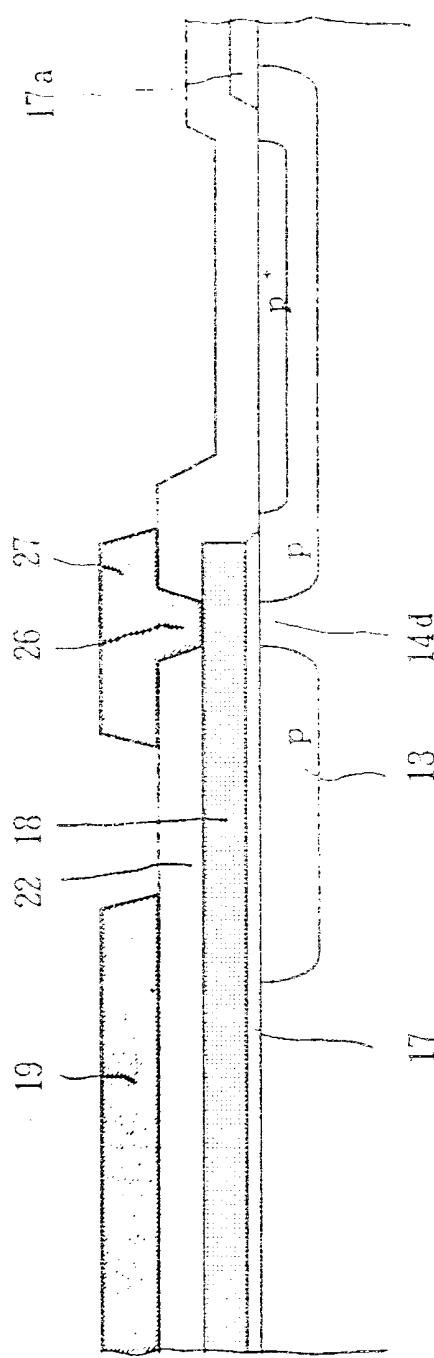
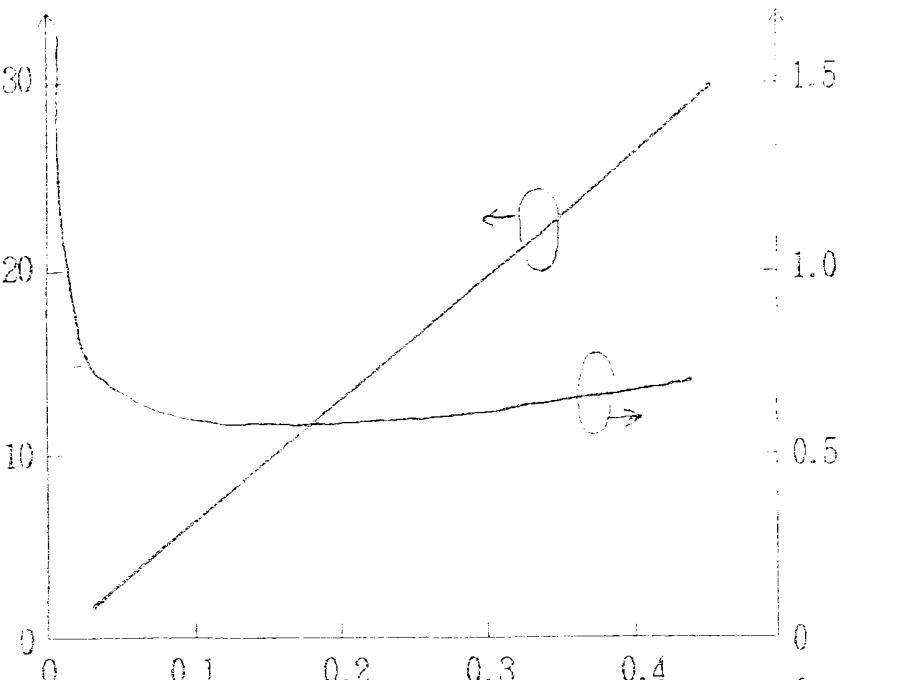


Fig. 5

Fig. 6

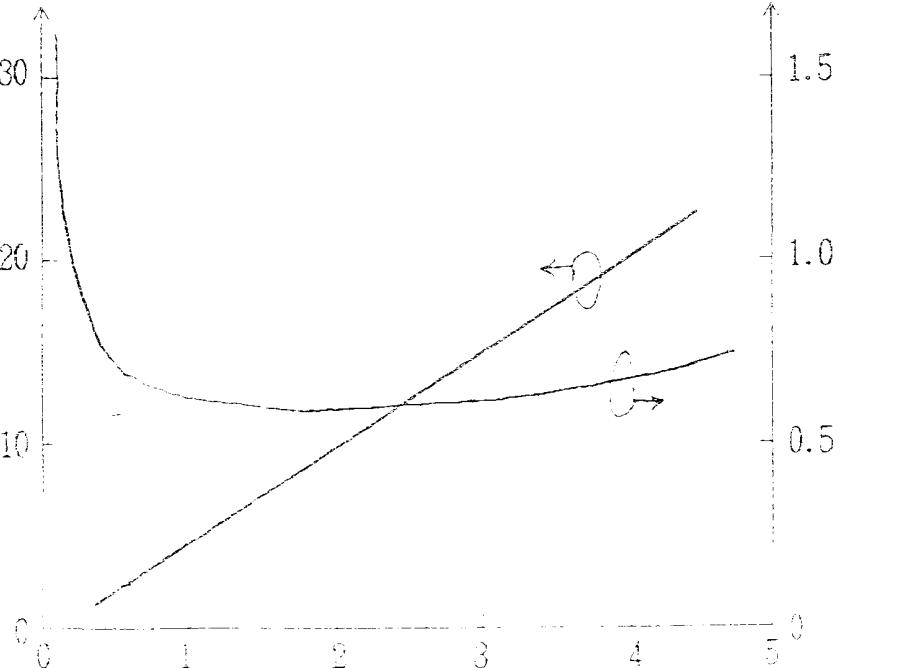
Crss (pF)



表面積域 / 表面積域 表面積比率 - Surface area ratio
 n-type surface region p-type well region

Fig. 7

Crss (pF)



表面積域 (μm)
 width of n-type surface region

Fig. 7

Fig. 8

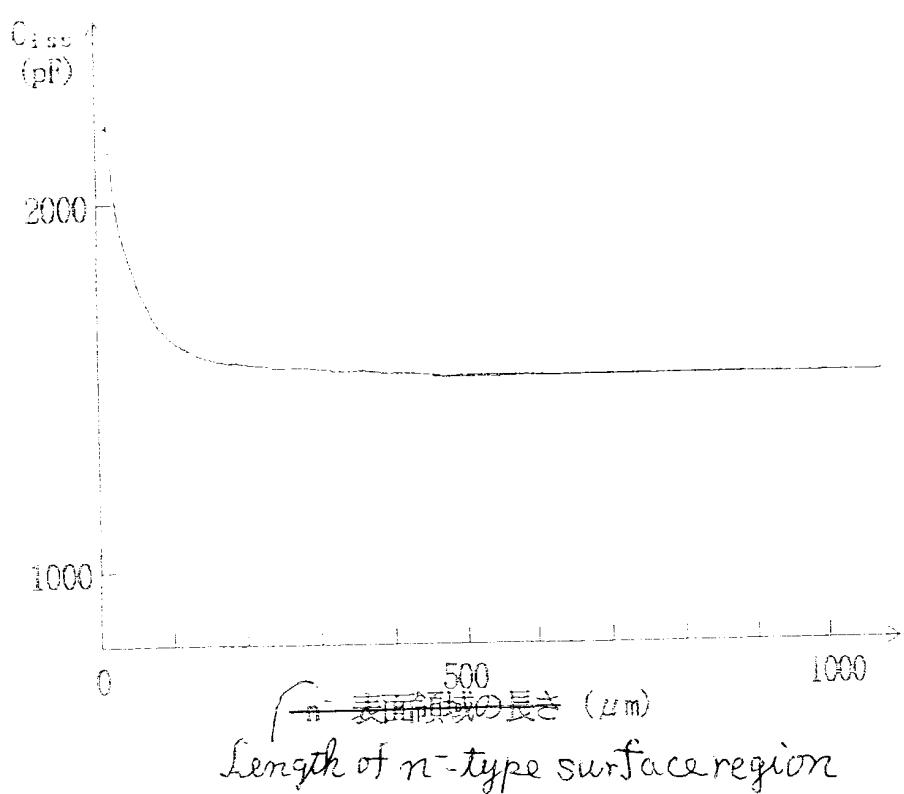


Fig. 8

Fig. 9

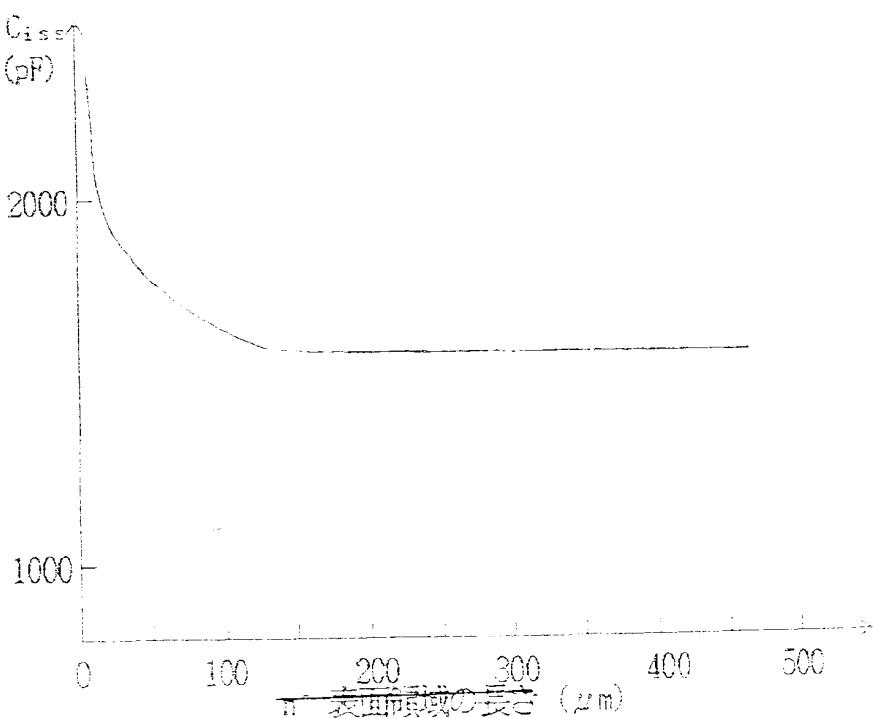
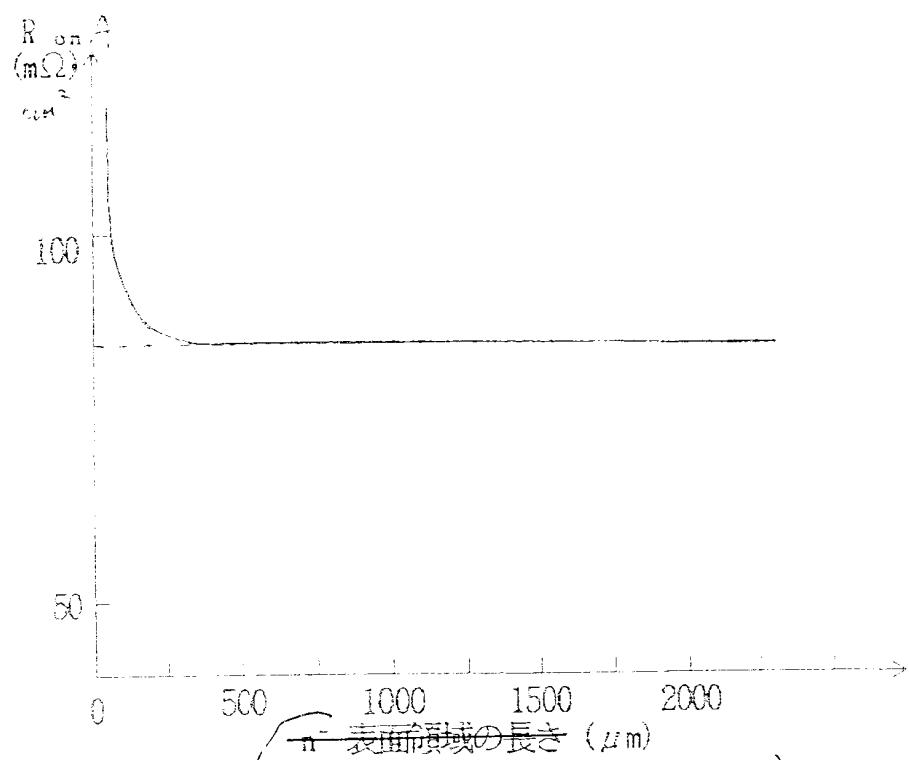


Fig. 9

[REDACTED]

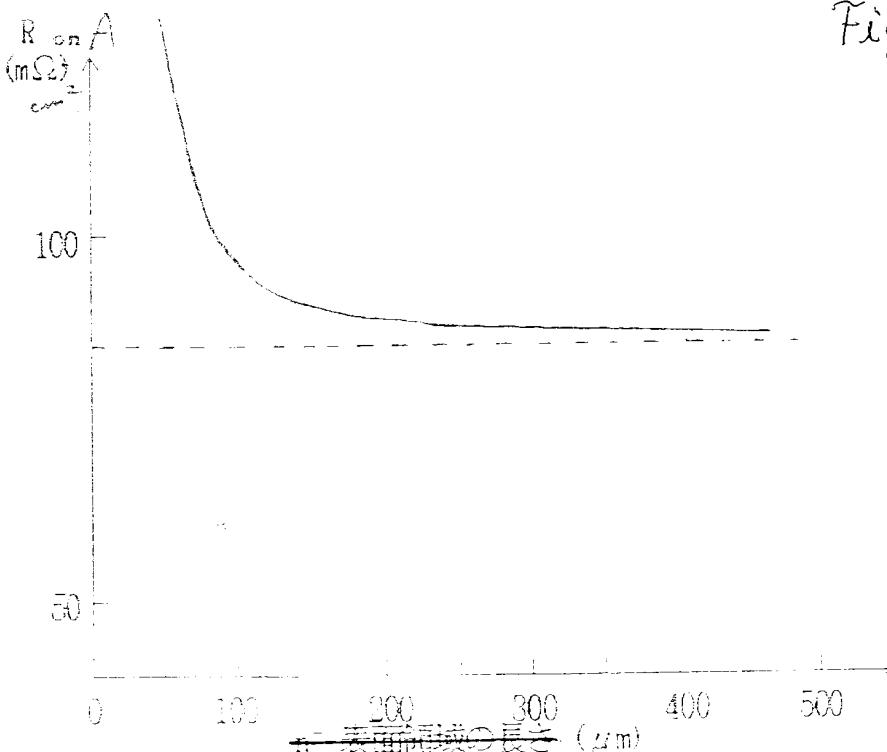
Fig. 10



Length of n -type surface region

[REDACTED]

Fig. 11



Length of n -type surface region

100 200 300 400 500 600 700 800 900 1,000

 R_{onA} ($\text{m}\Omega\text{cm}^2$)

1,000

100

10

1

100 300 1,000 3,000

 $E_{V_{DSS}}$ (V)Comparative
examples

比較例

本発明
実施例Embodiments
of the Invention

Fig. 12

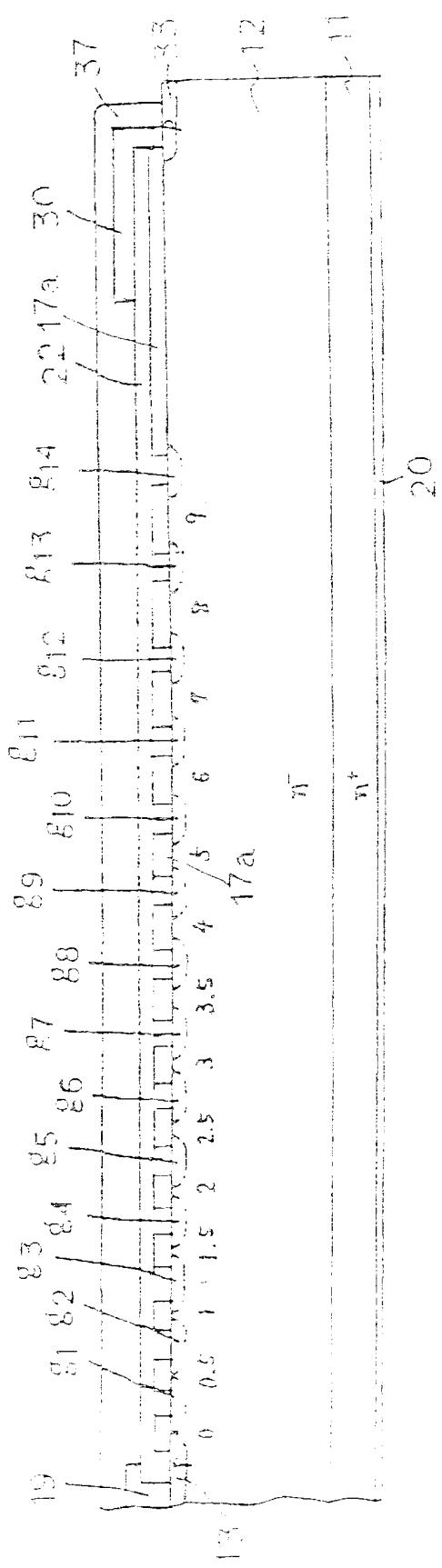


Fig. 13

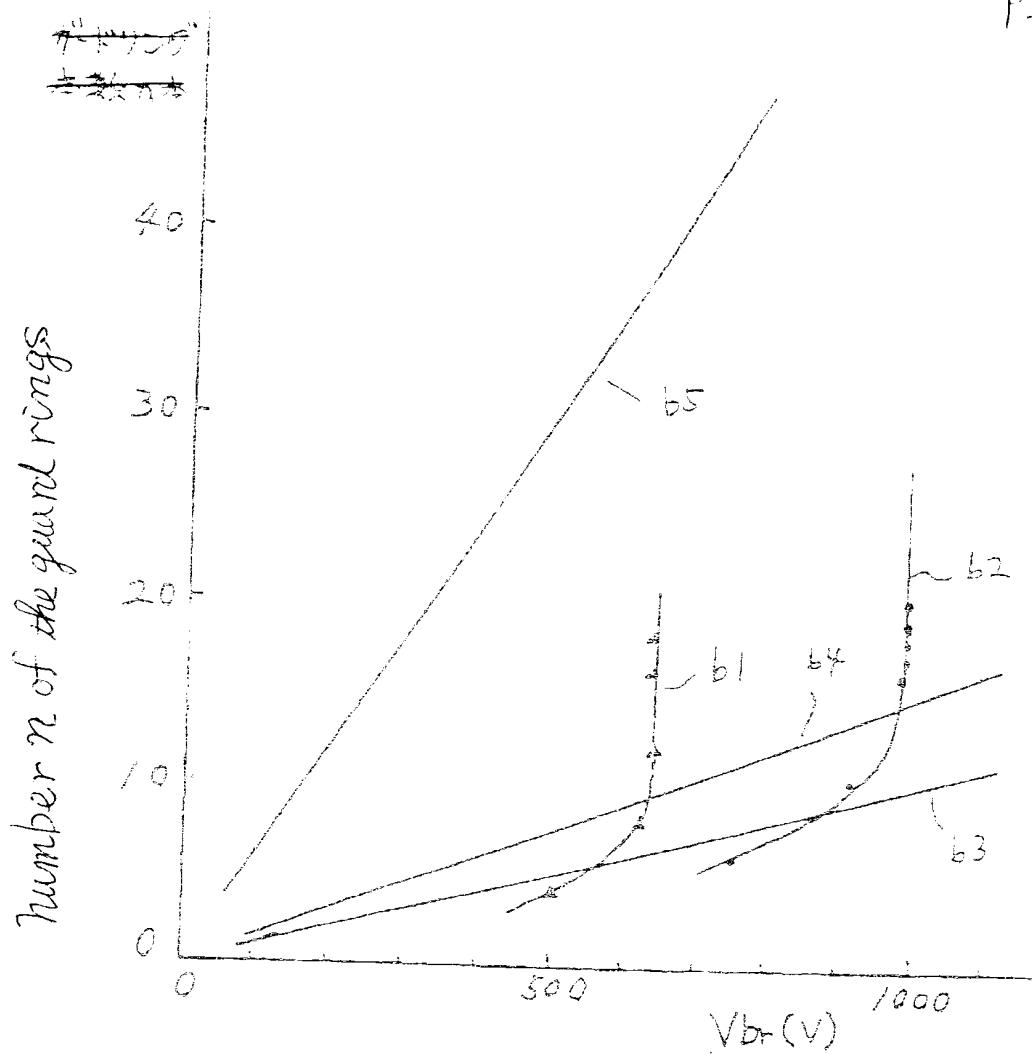
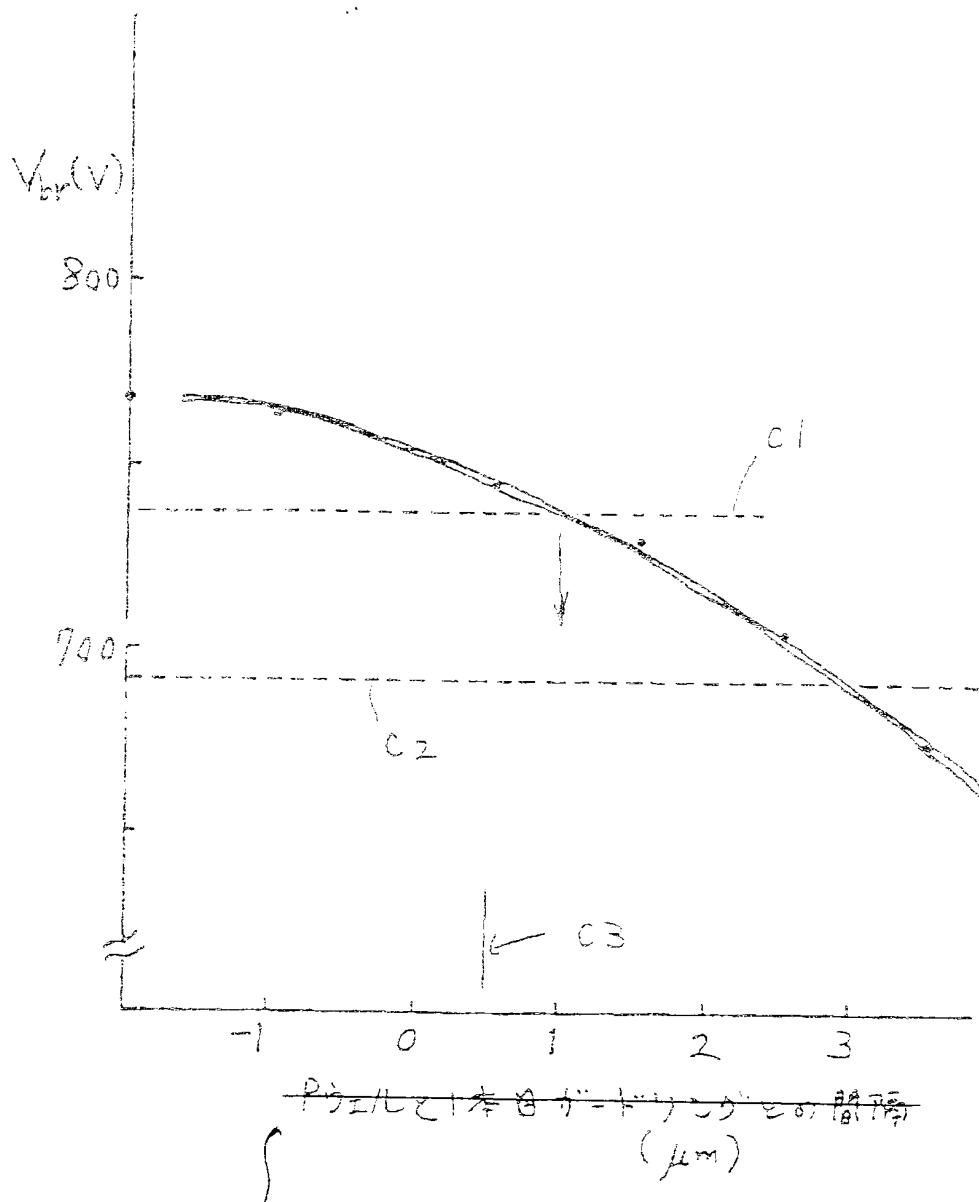
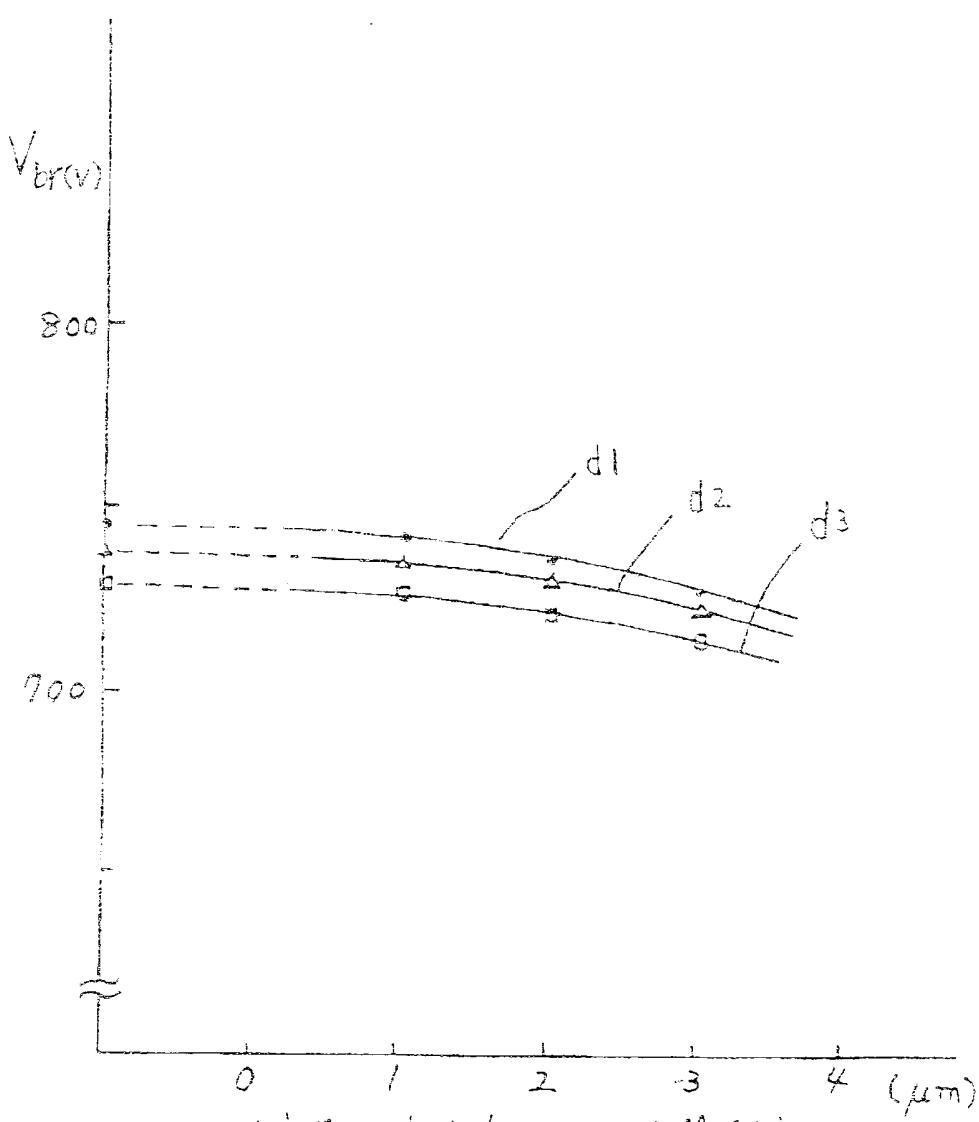


Fig. 15



Spacing between p-type well region
and first guard ring



Spacing between first and second guard rings

100-177

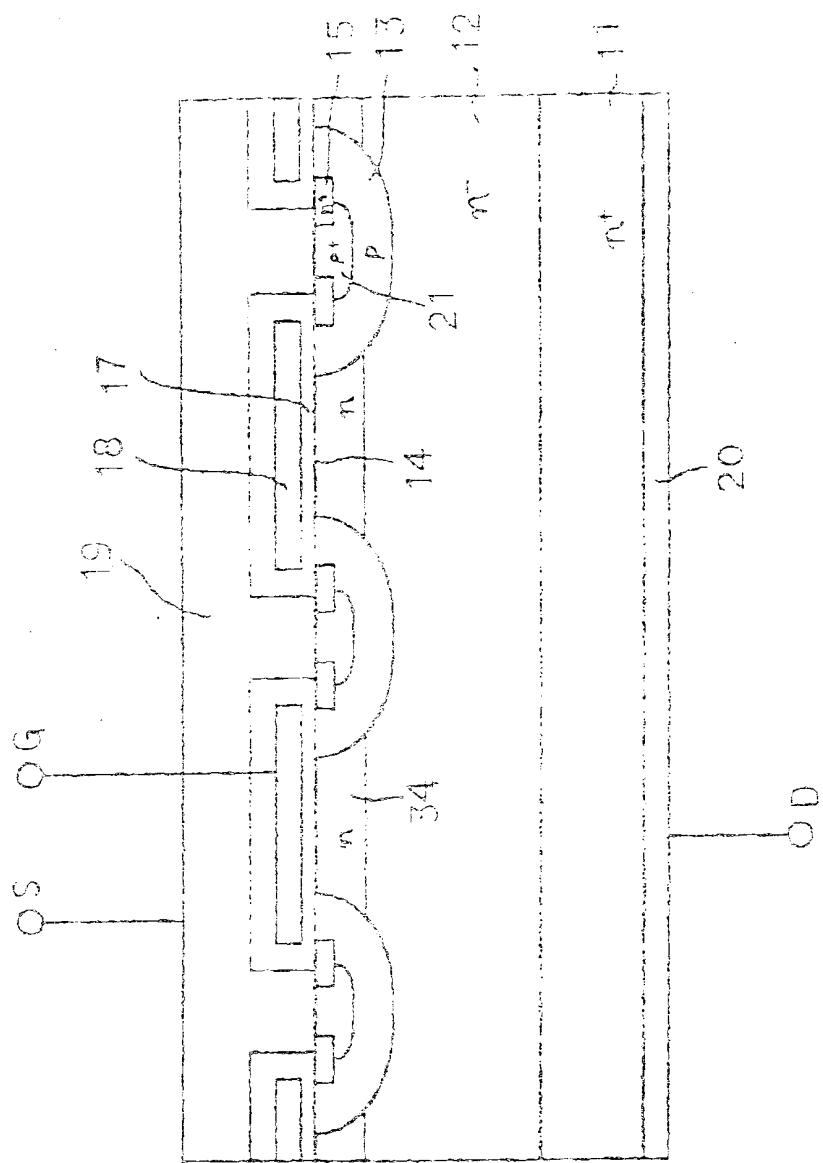


Fig. 17

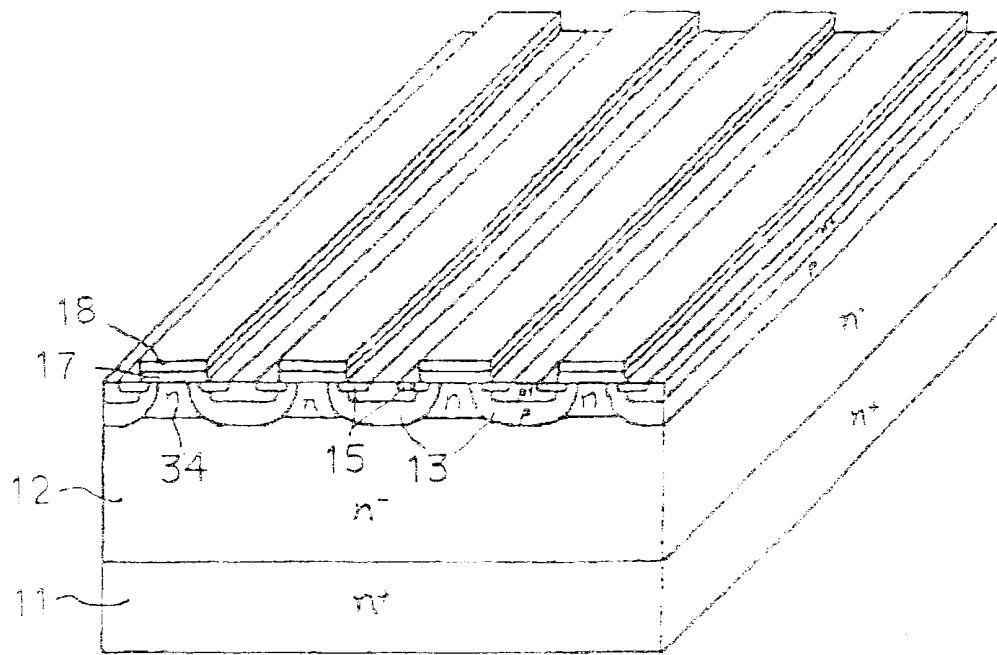


Fig. 18

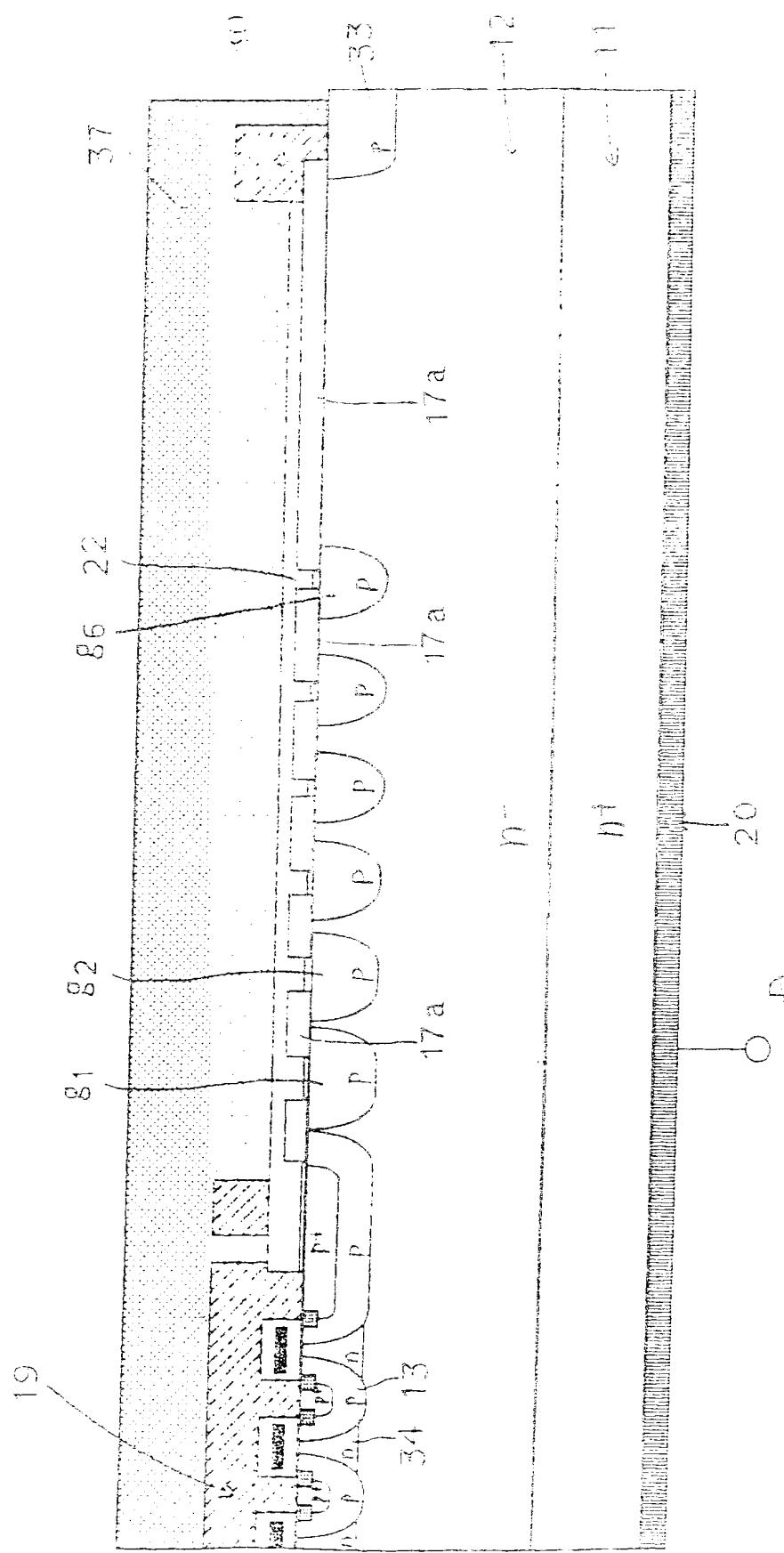


Fig. 19

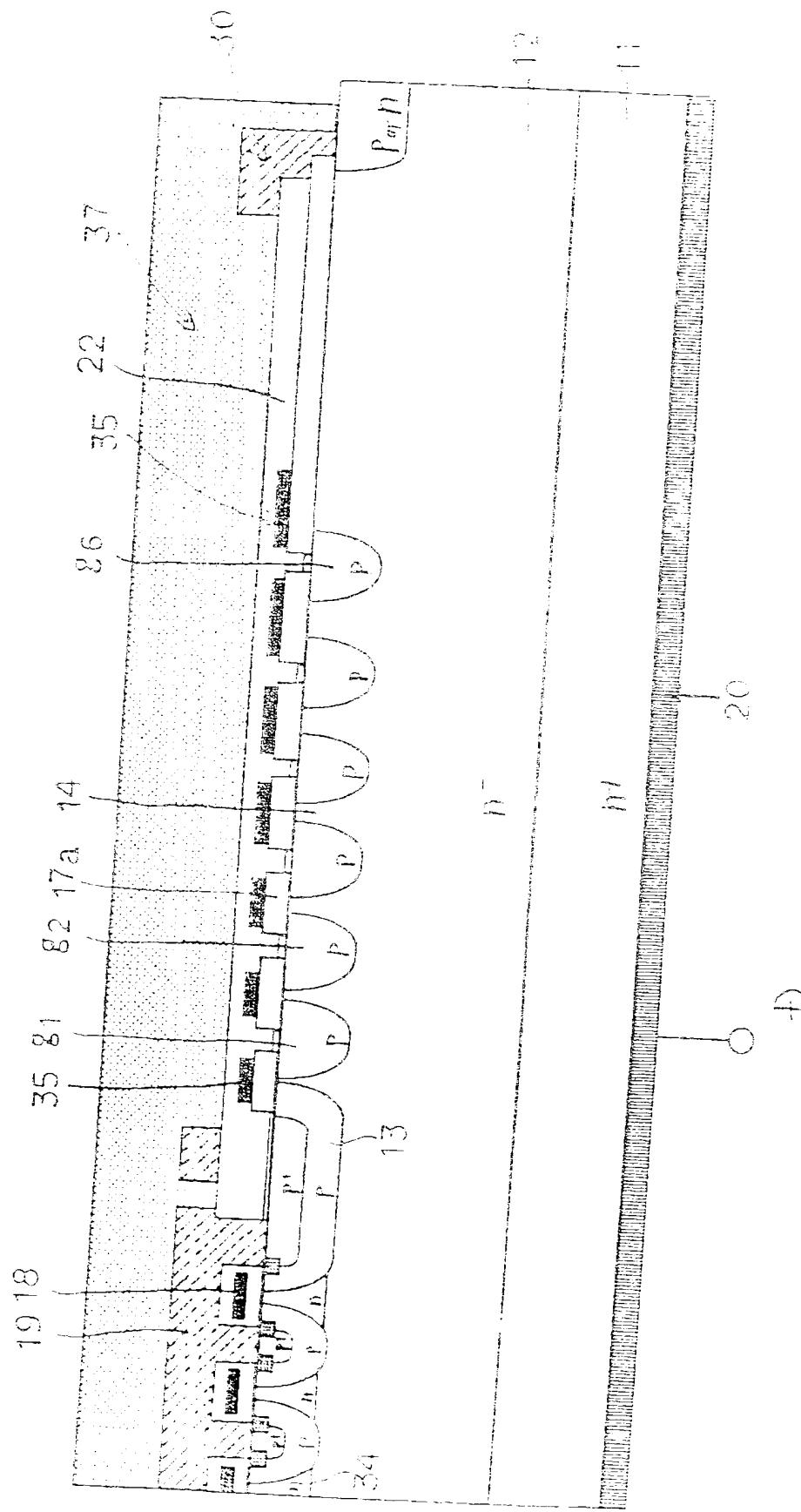


Fig. 20

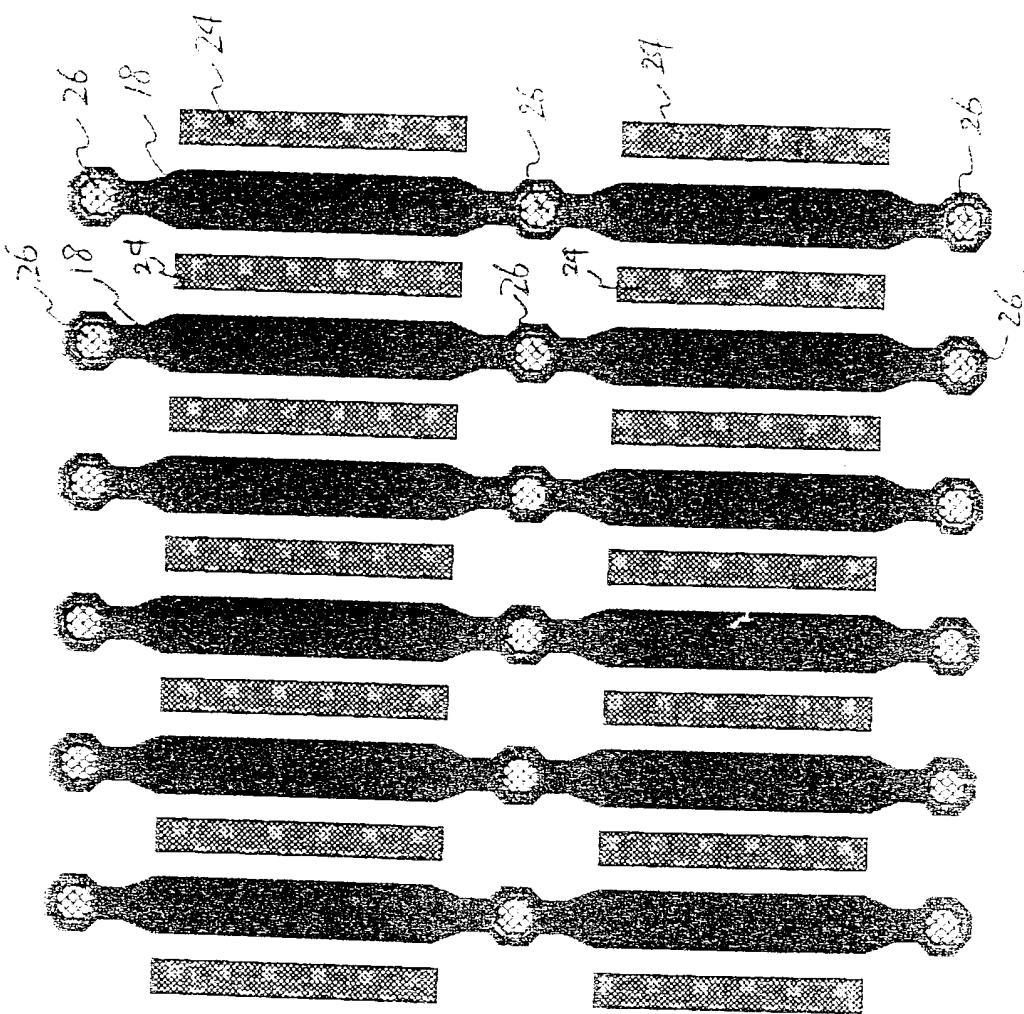


Fig. 21

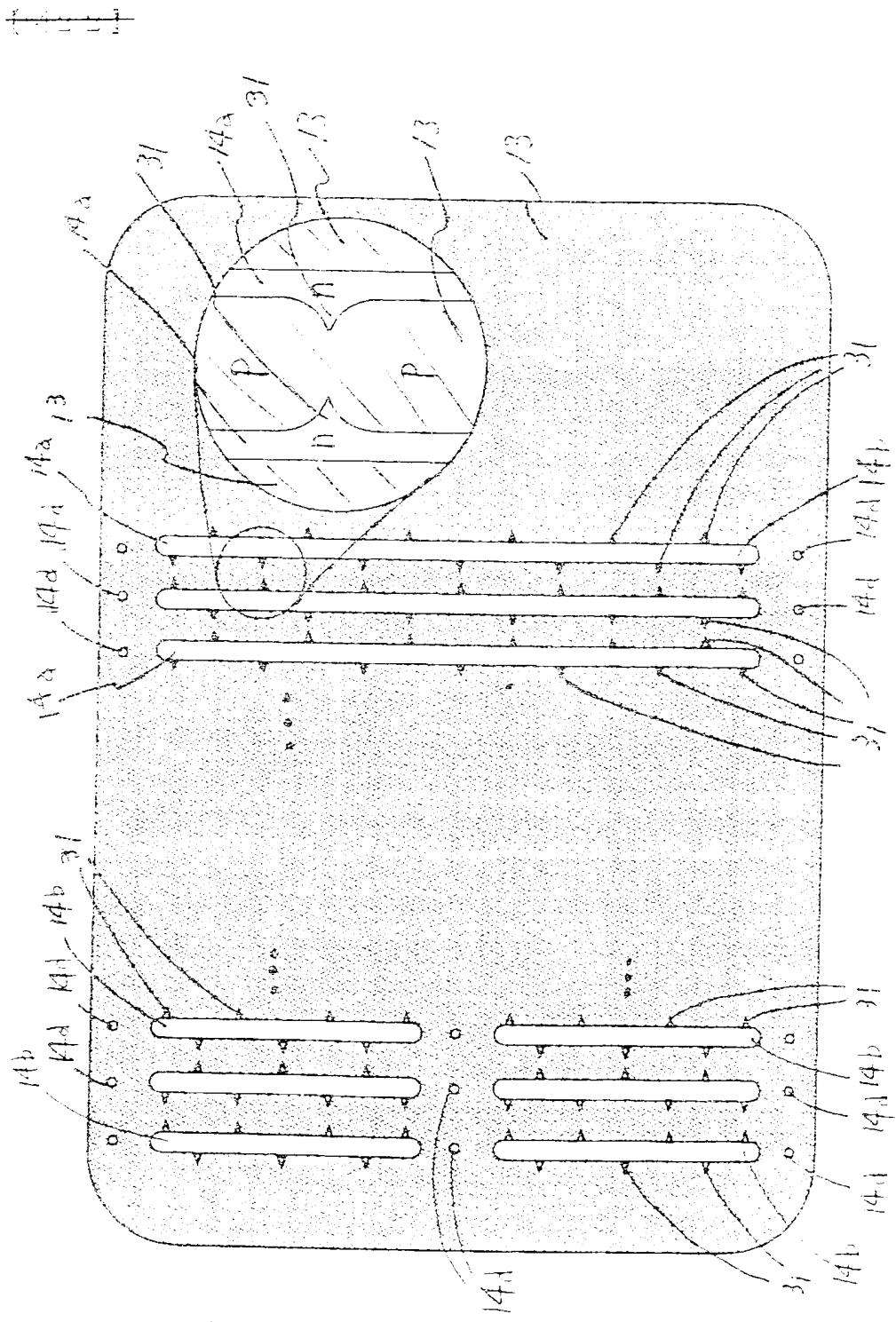


Fig. 22

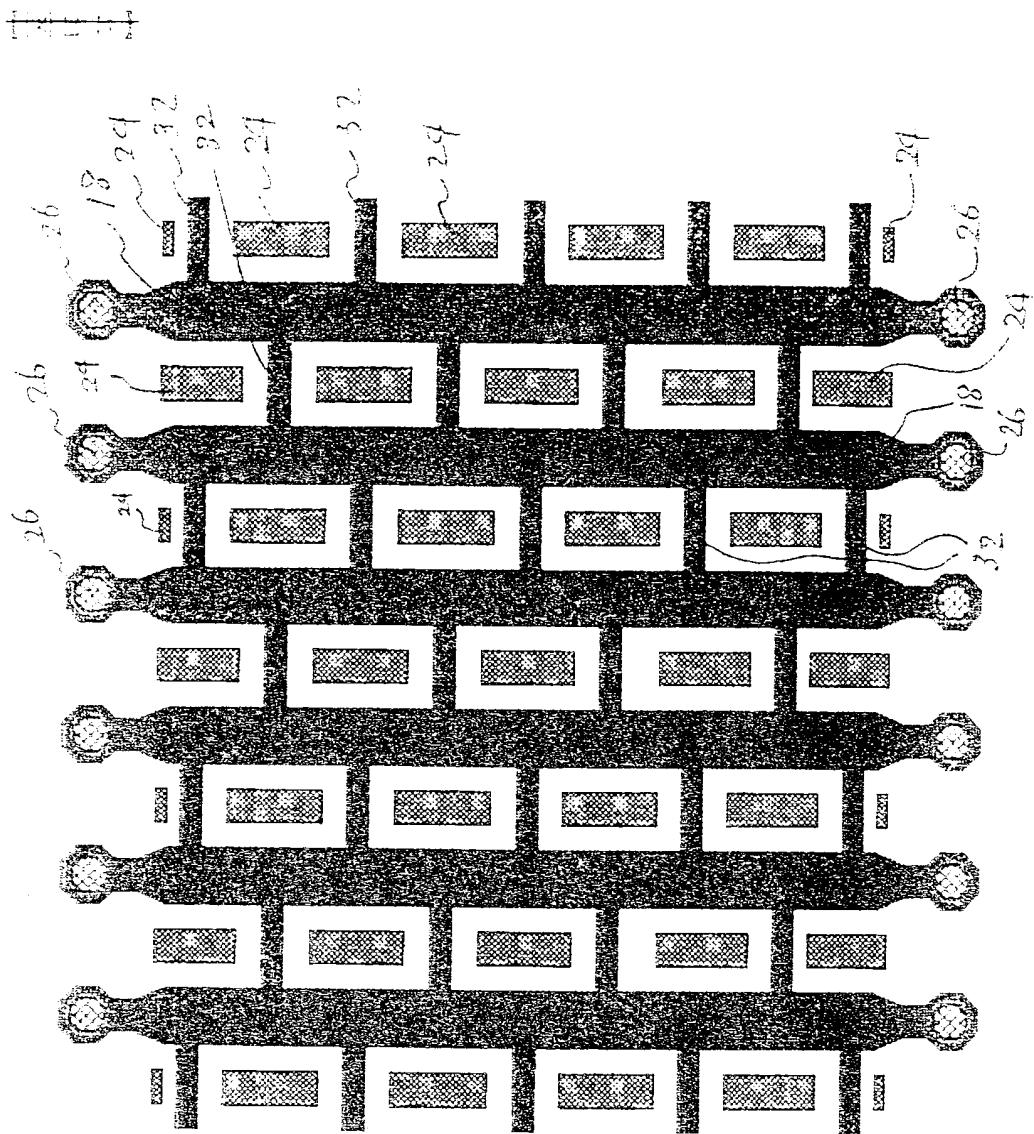


Fig. 23

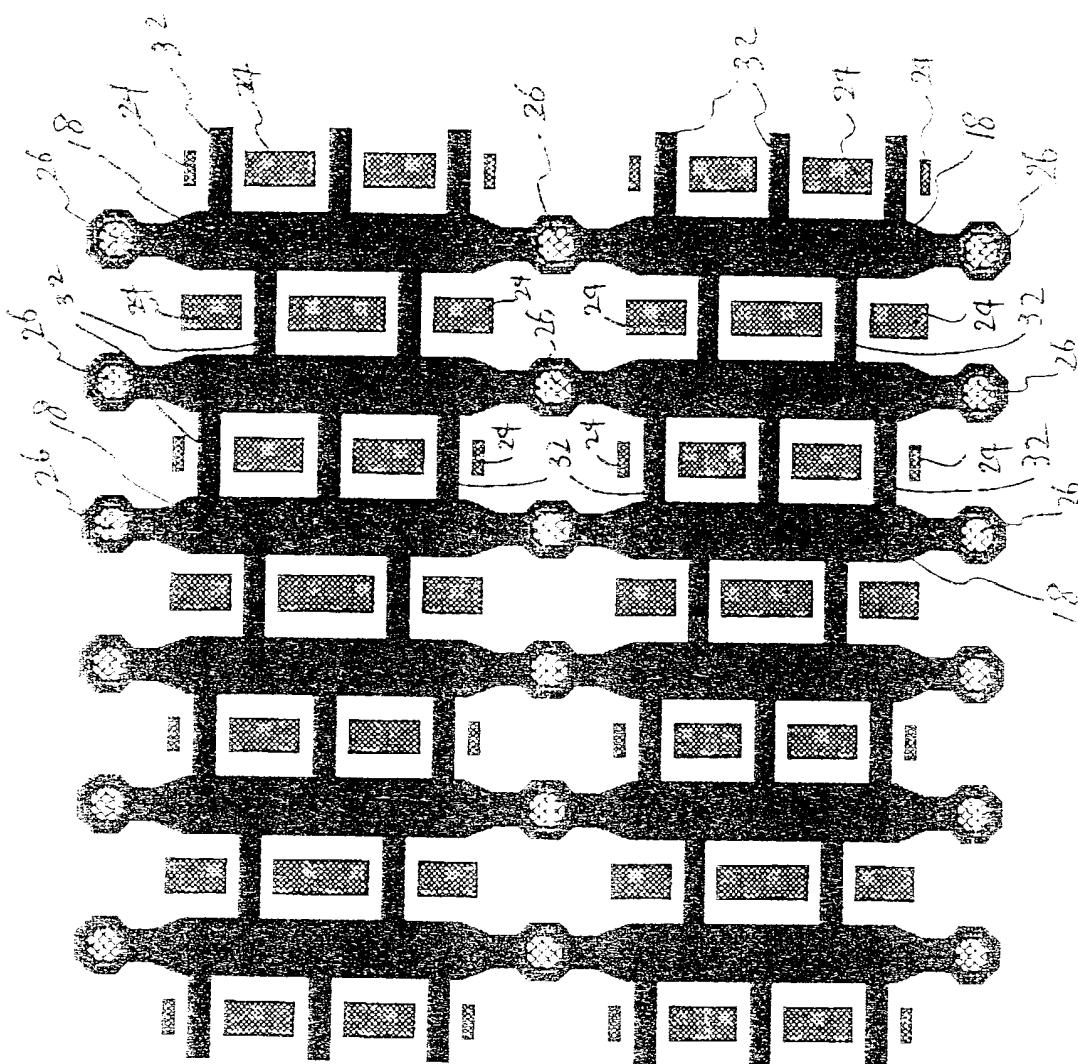


Fig. 24

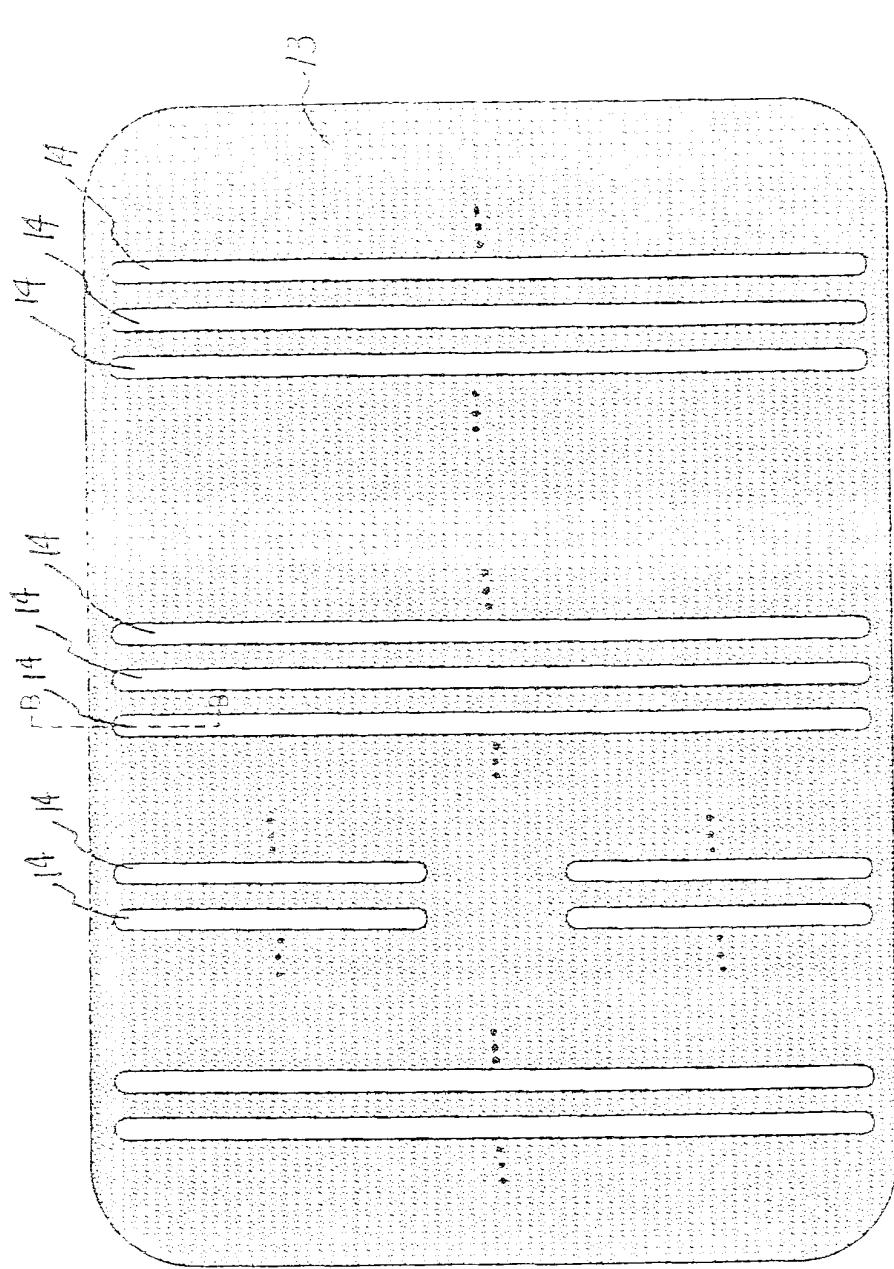


Fig. 25

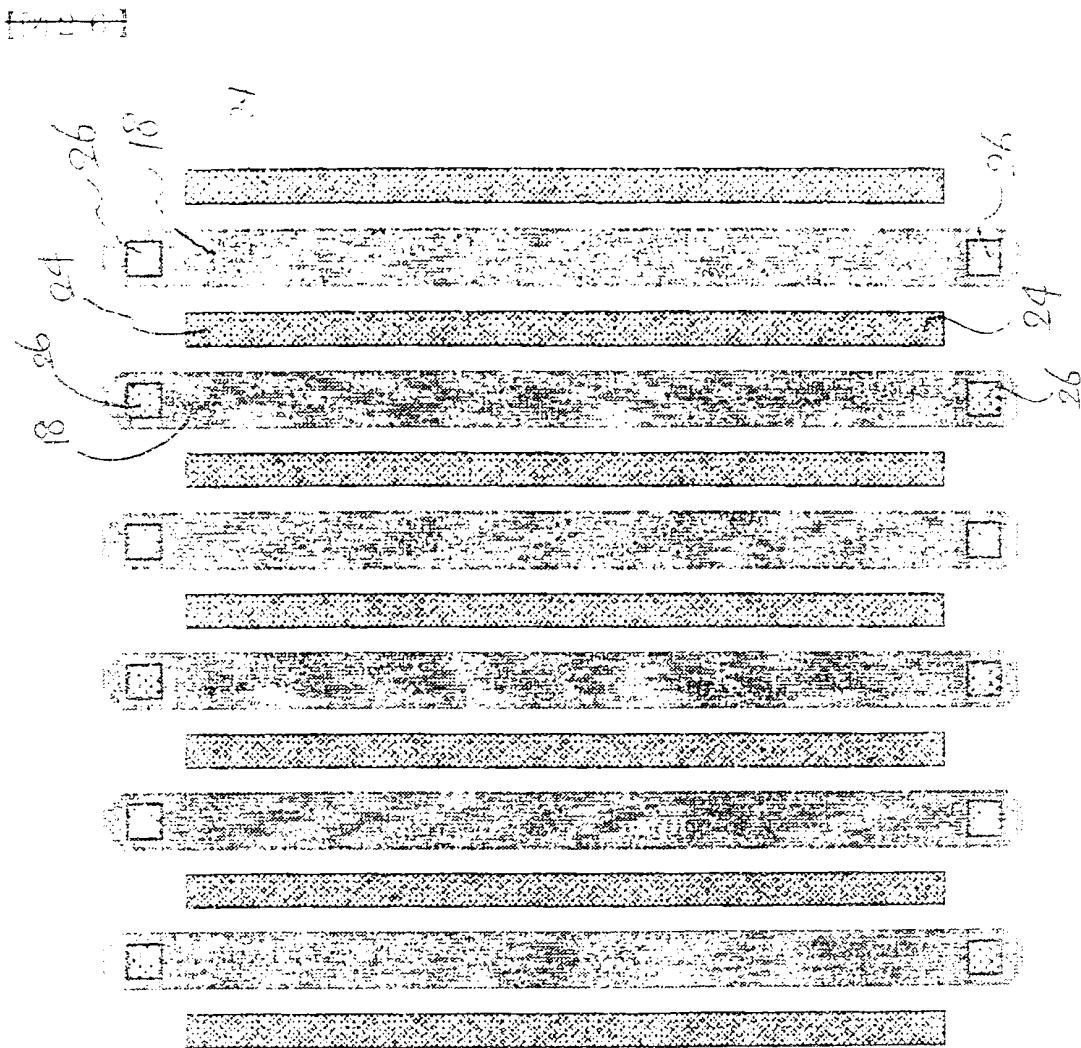


Fig. 26

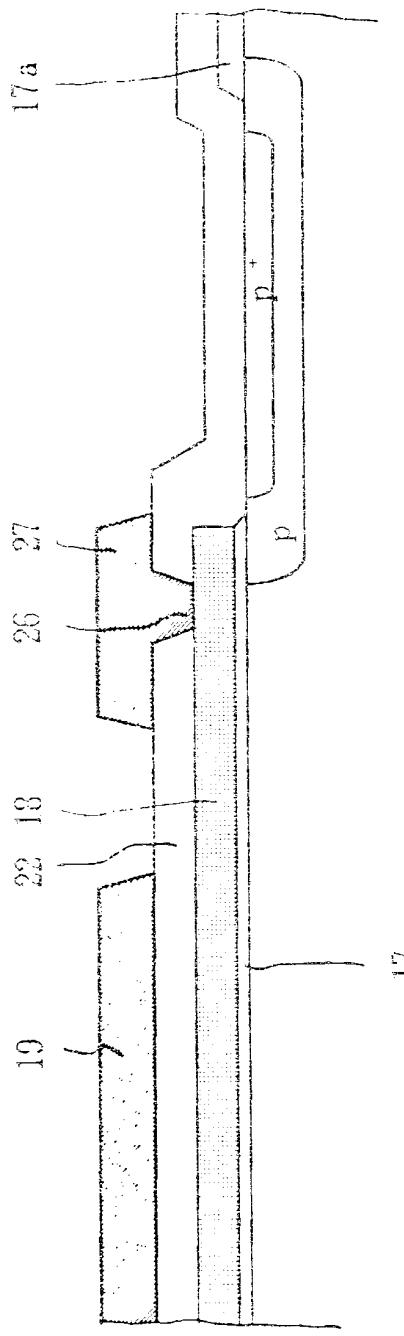


Fig. 27

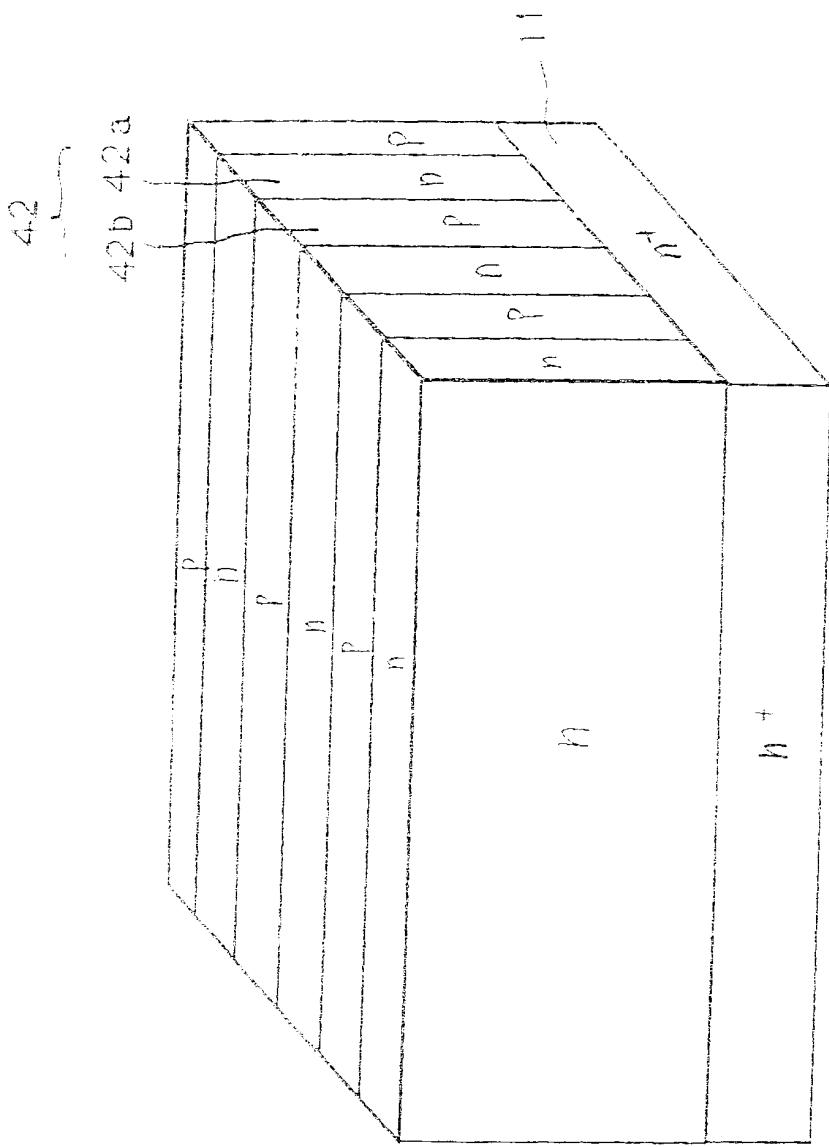


Fig. 29

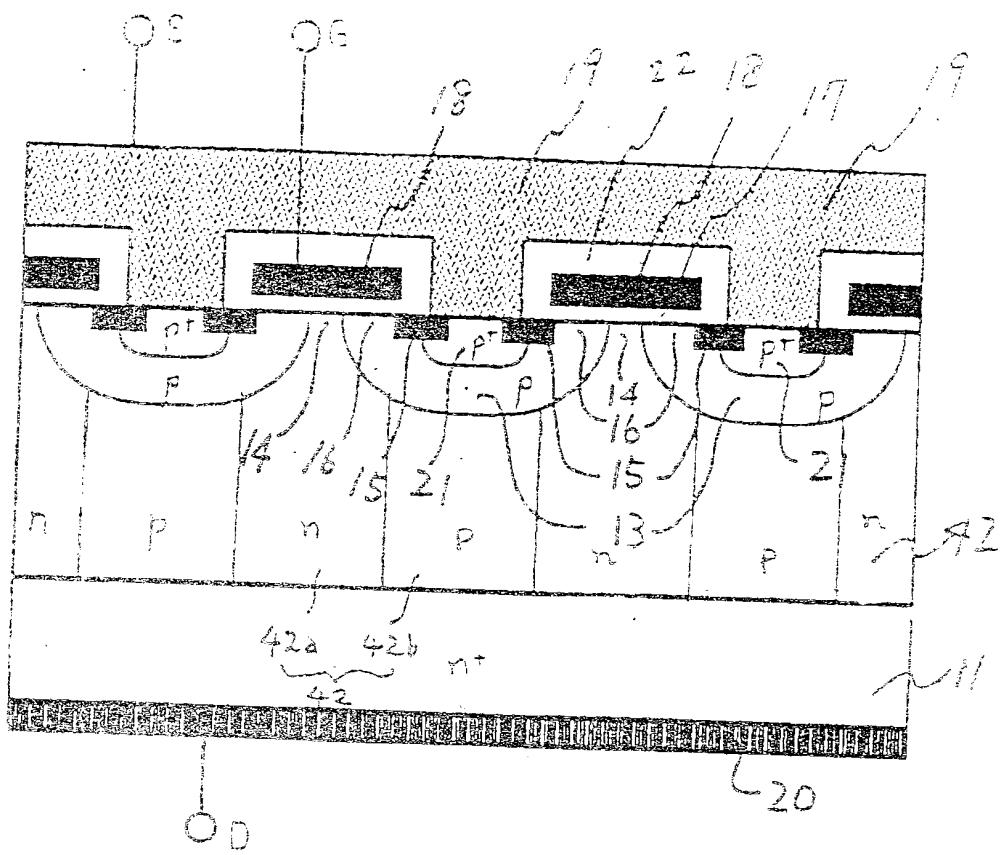


Fig. 30

Fig. 3/(a)

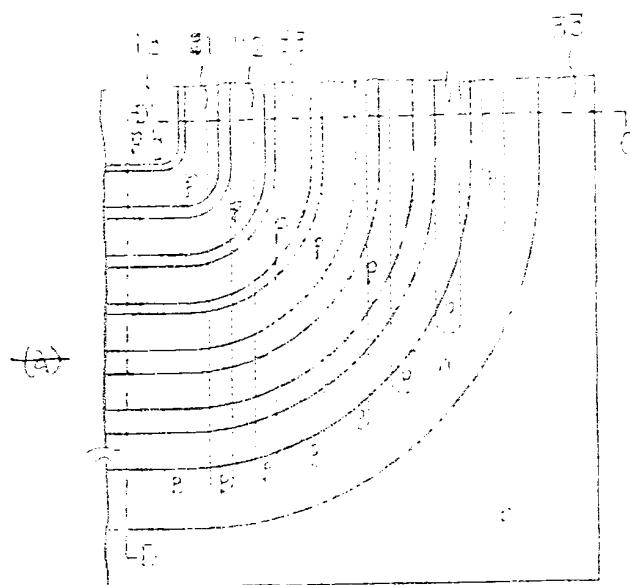


Fig. 31(b)

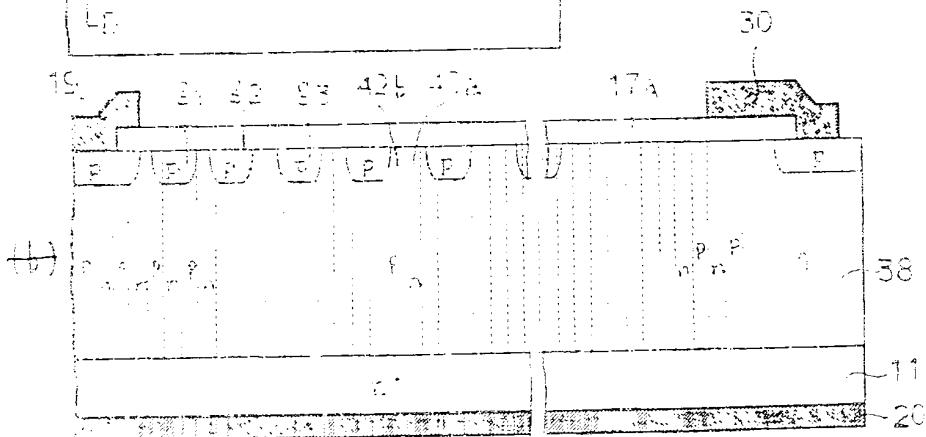
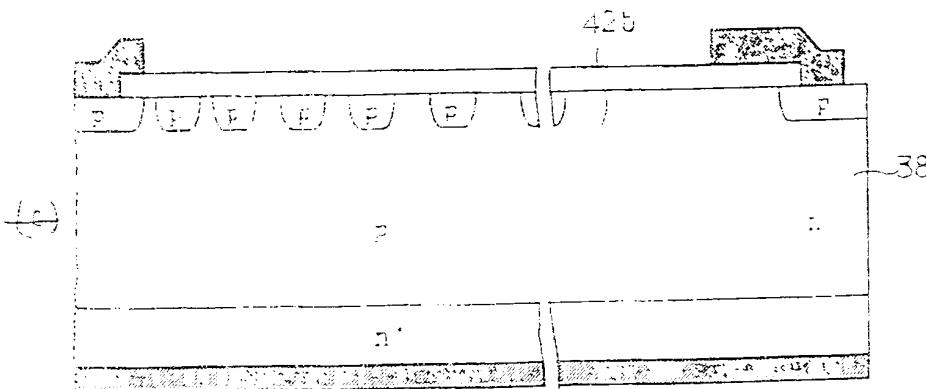


Fig. 31(c)



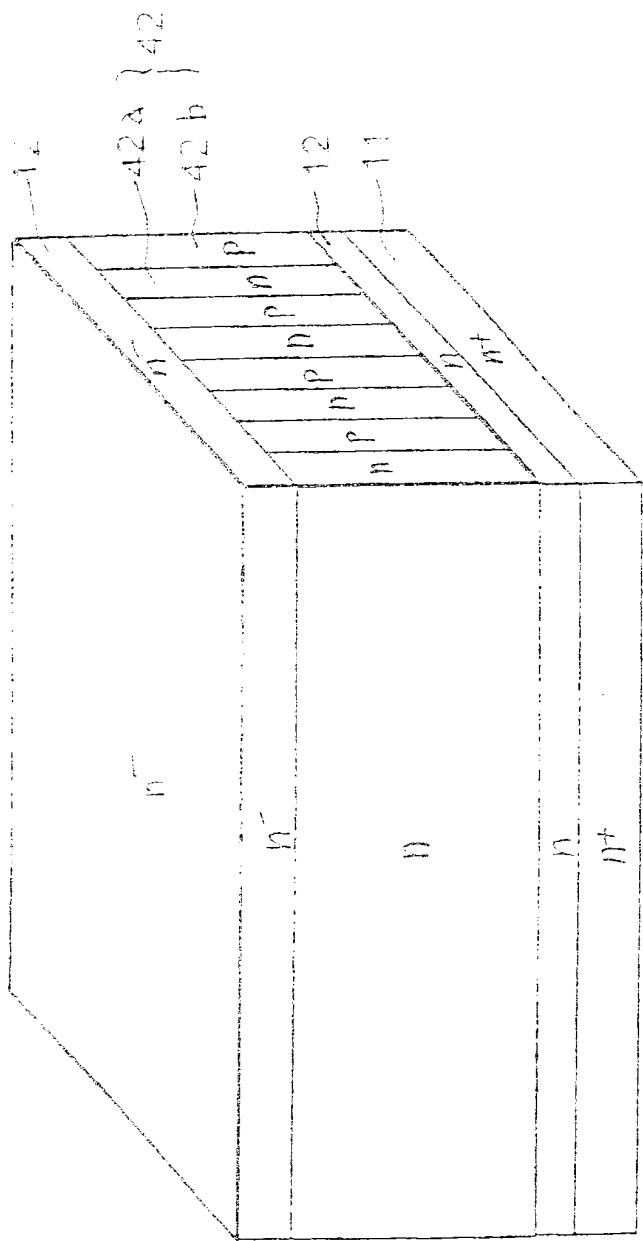


Fig. 32

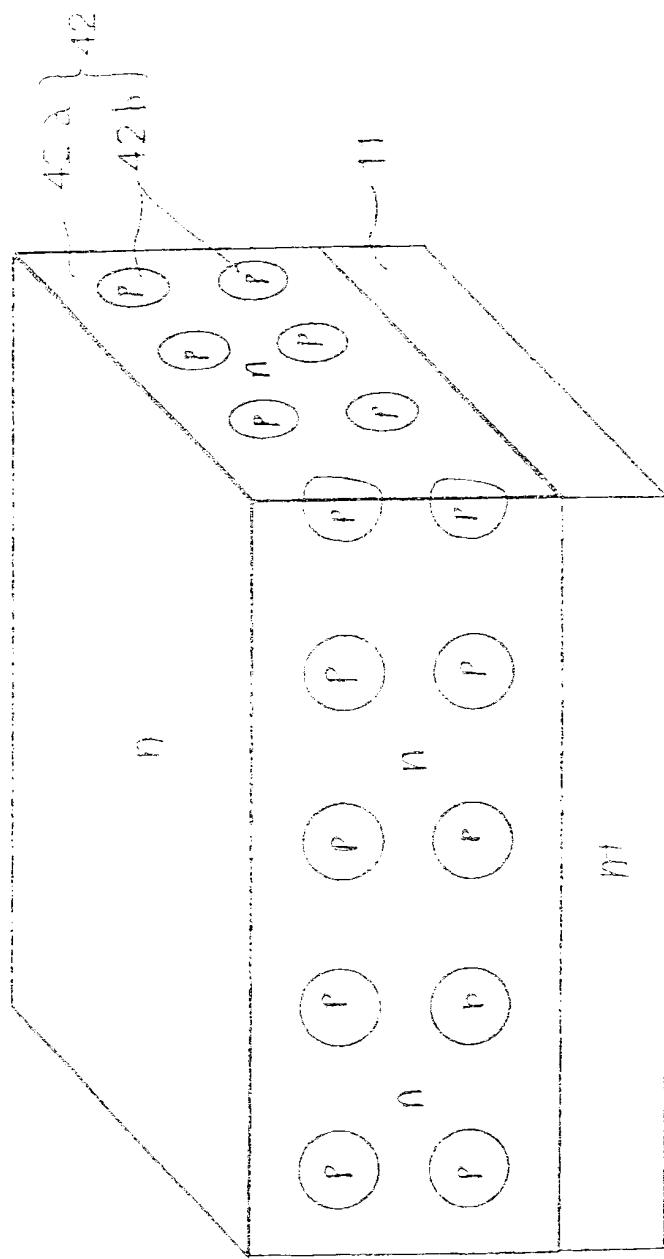


Fig. 33

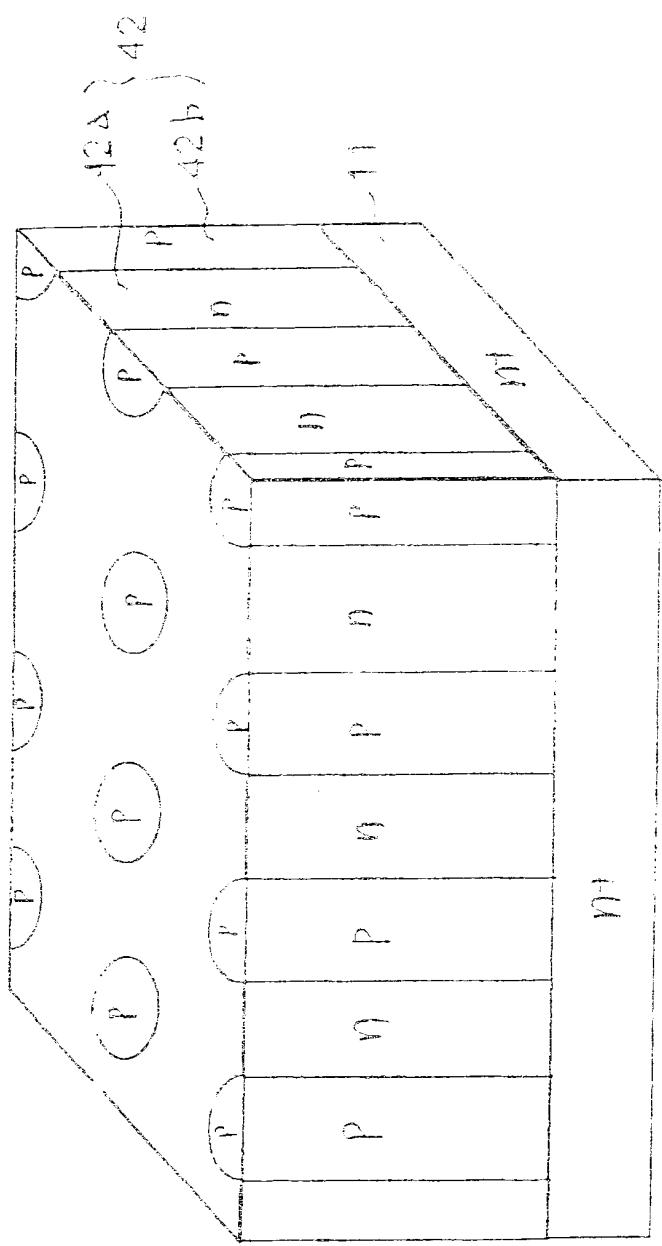


Fig. 34

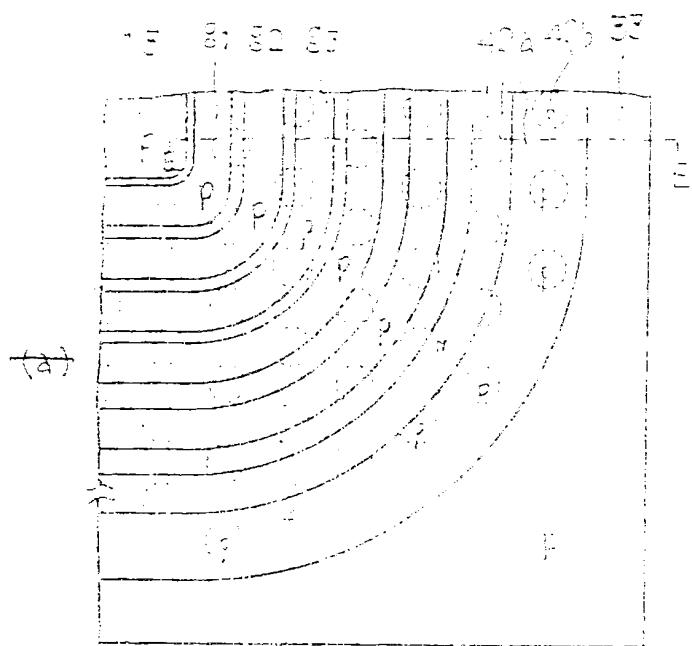


Fig. 35(a)

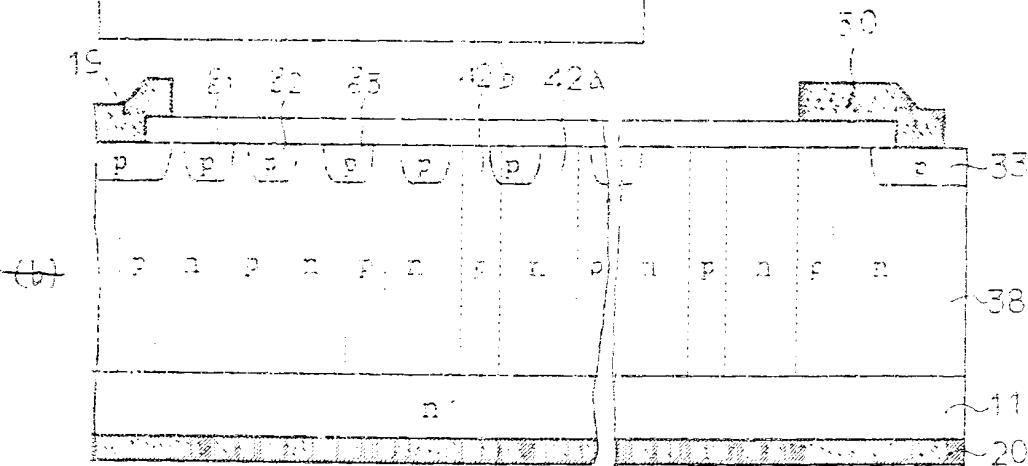


Fig. 35(b)

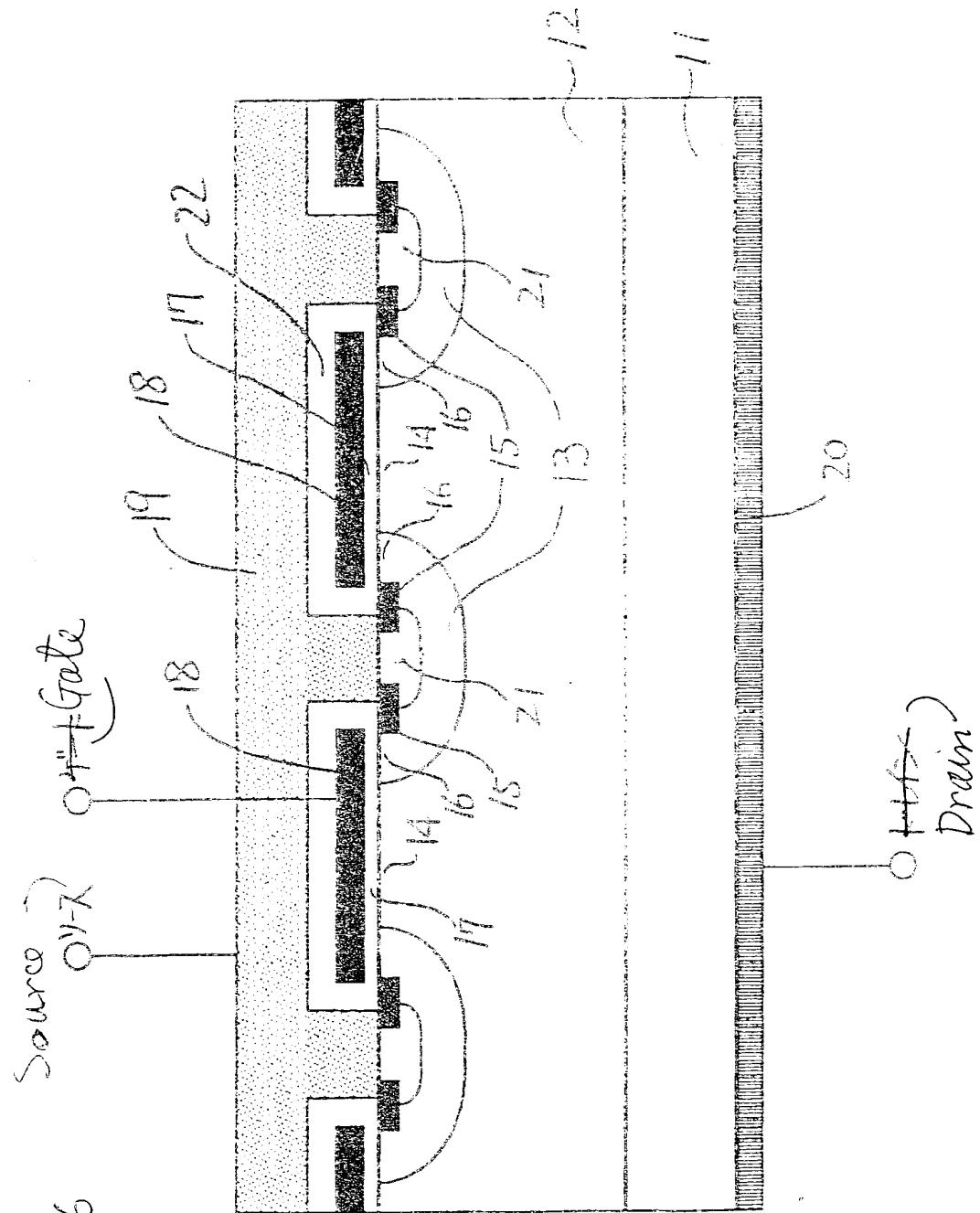


Fig. 36

Patent Appln. No.: 2001-176500

Date of Filing: June 12, 2001 (2001)

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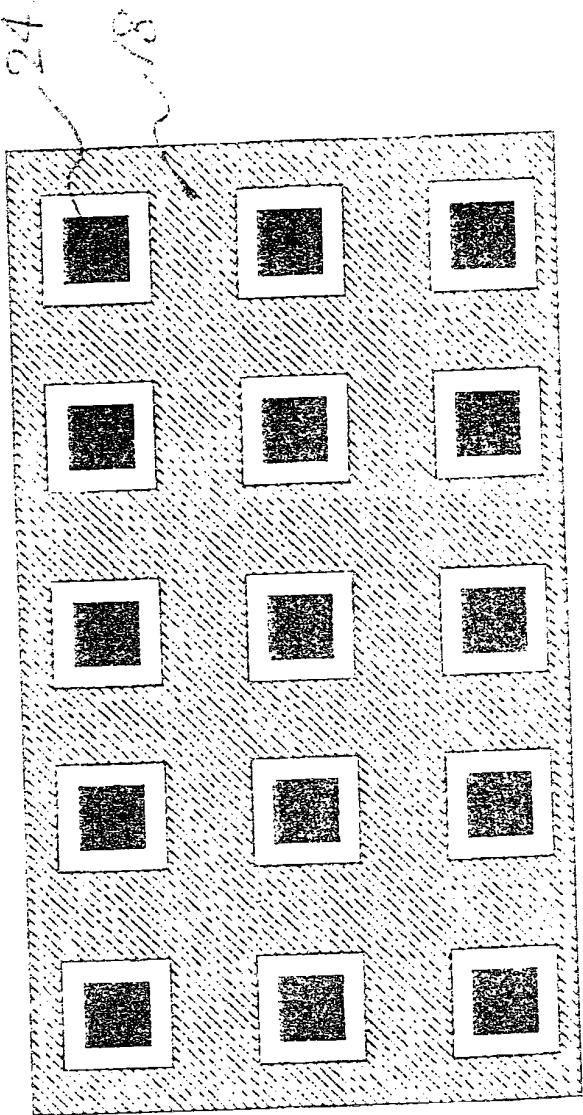


Fig. 37

(Patent Appln. No.: 2001-1176500

Date of Filing: June 12, 2001

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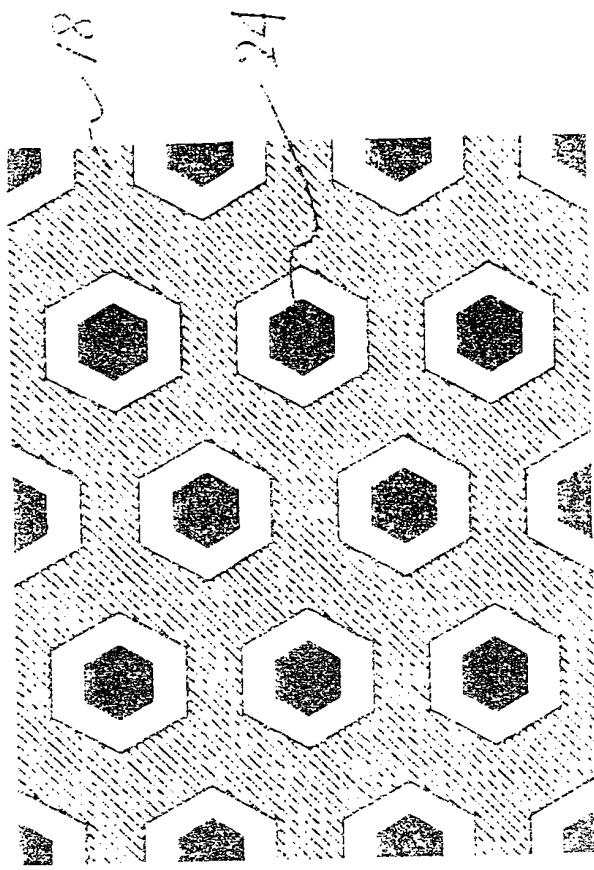


Fig. 1
Fig. 2

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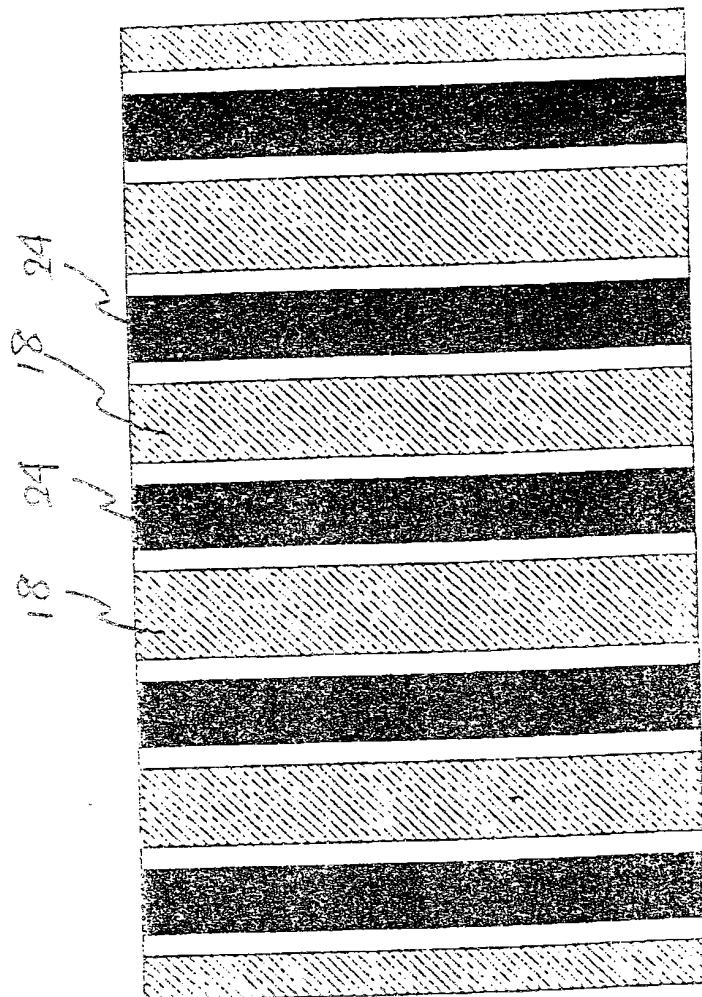


Fig. 39

Patent Appln. No.: 2001-176500

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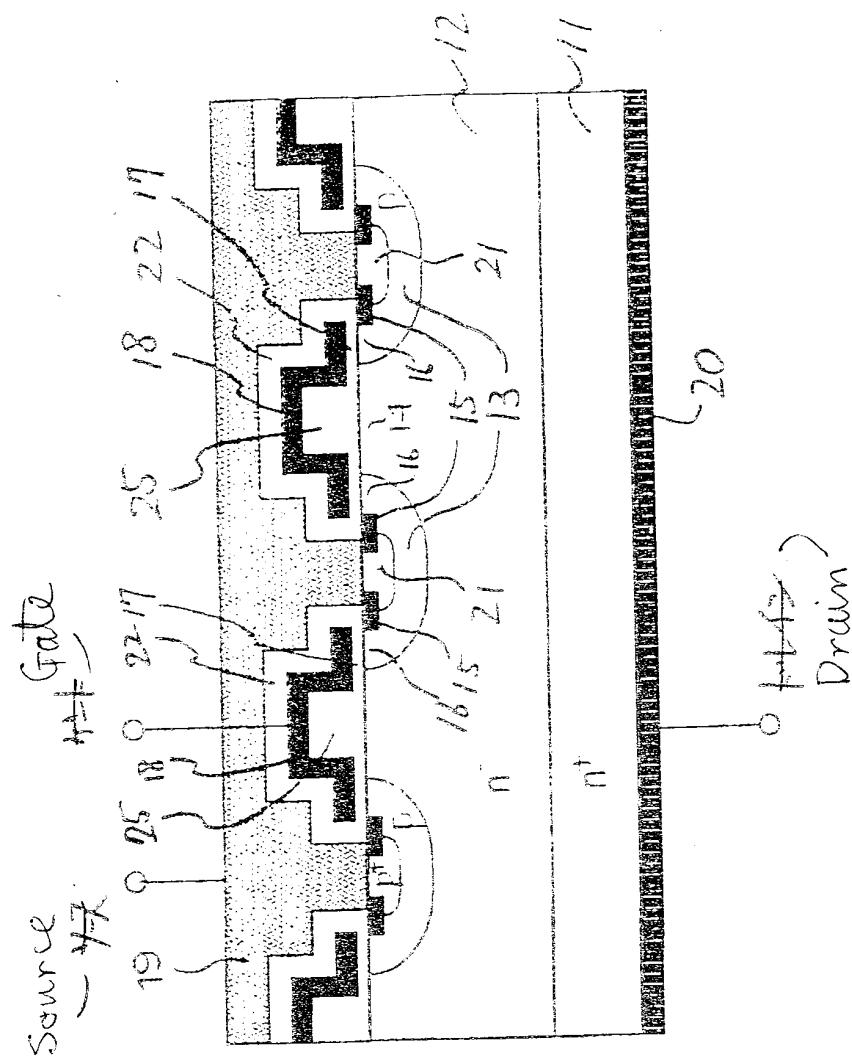


Fig. 40

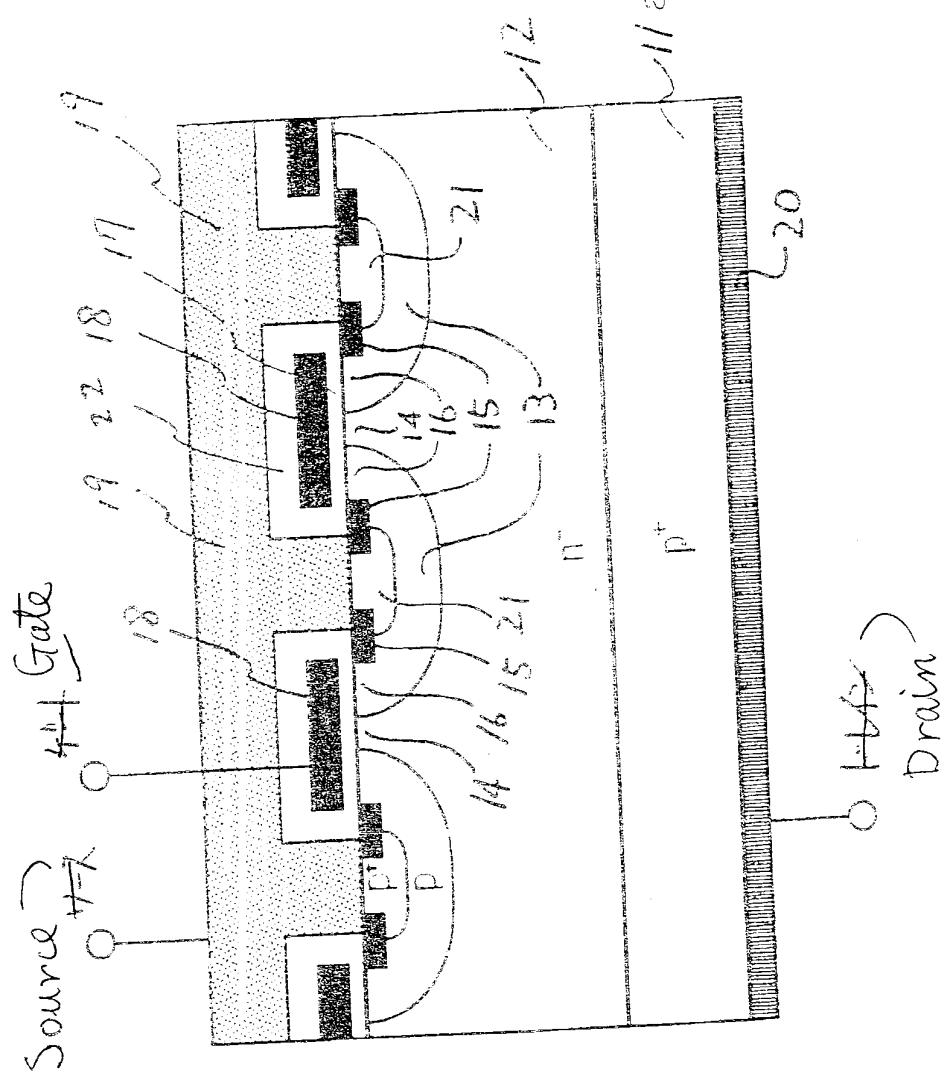


Fig. 41

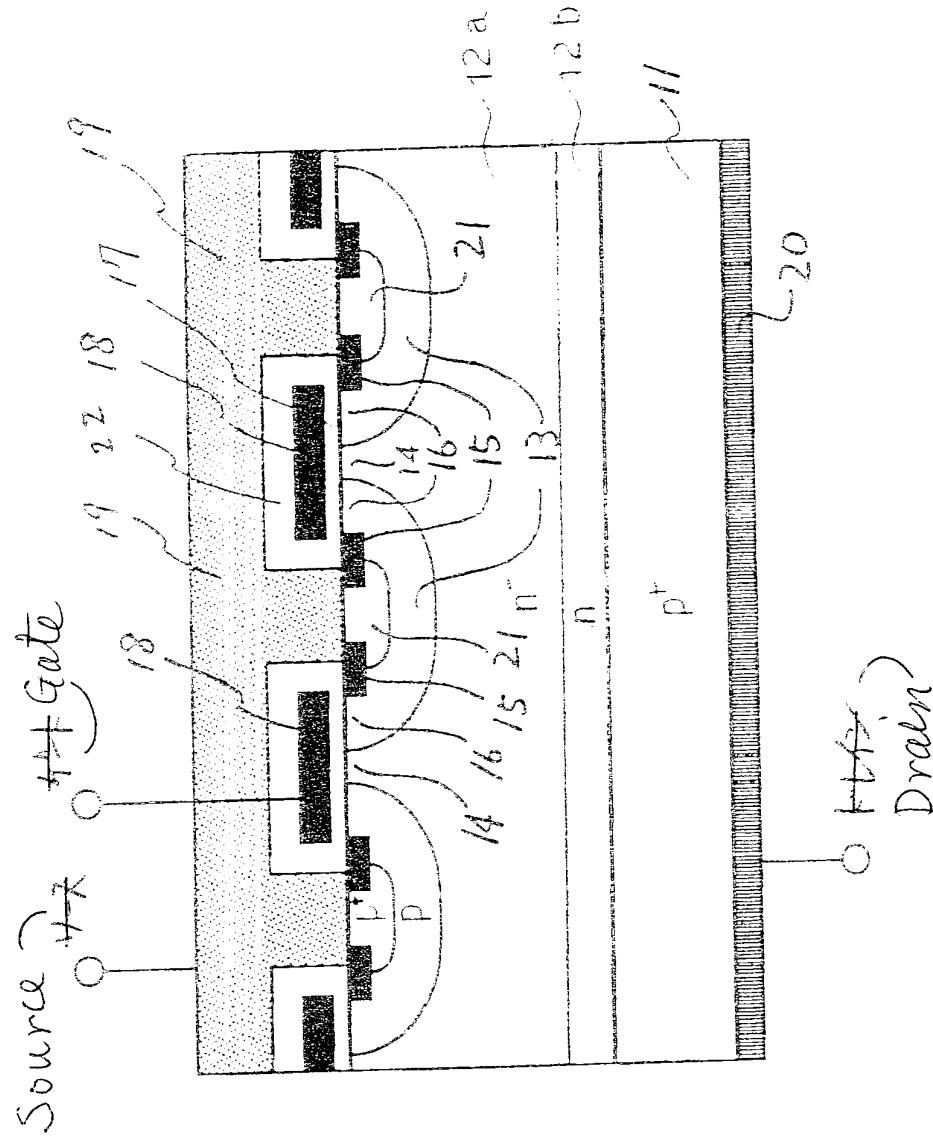
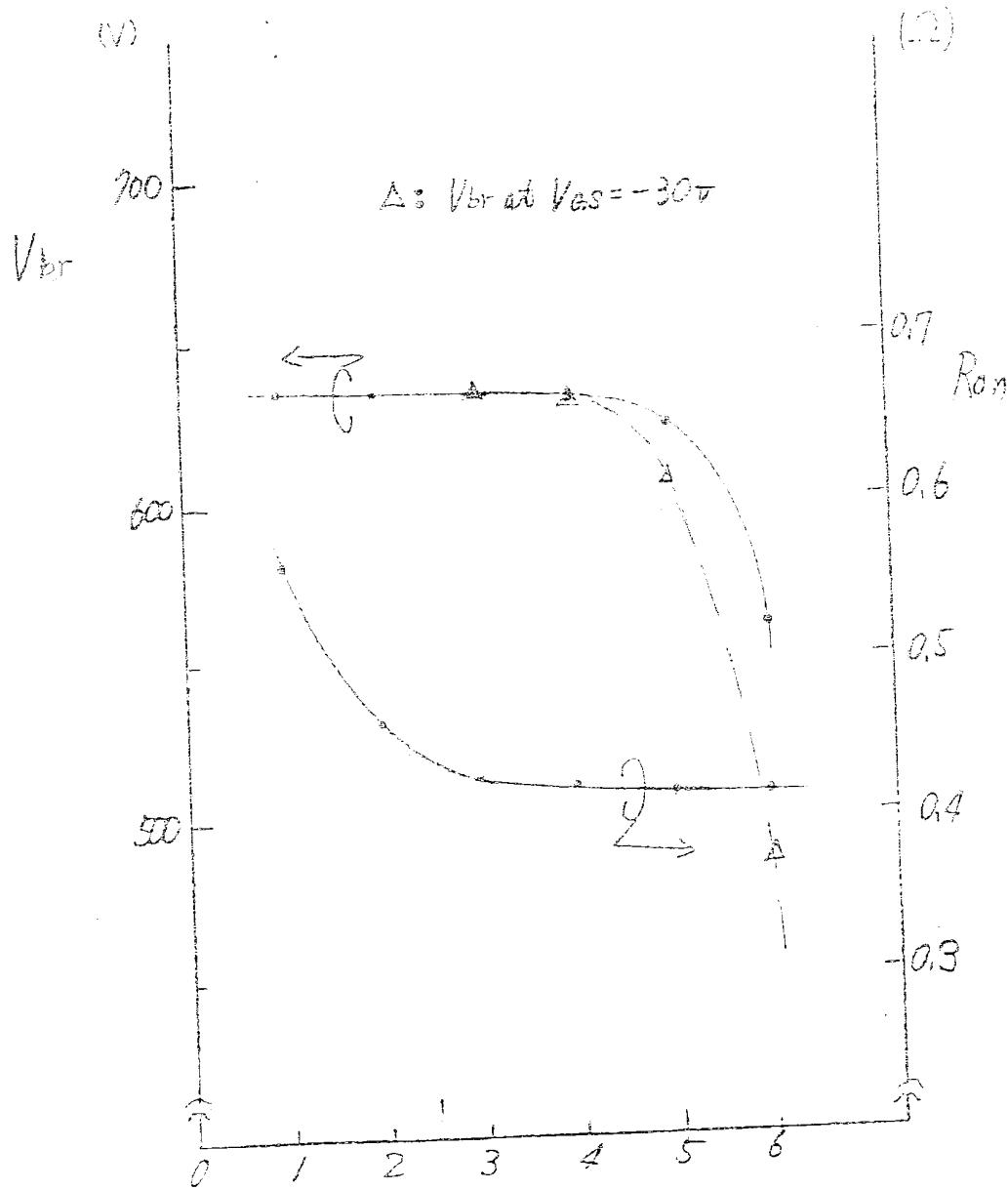


Fig. 42

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Fig. 43



~~磷素注入量~~ ($\times 10^{12}$ 個/ cm^2)
Phosphorus dose amount